OneCommand™Manager Command Line Interface Version 6.2 User Manual

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1. Introduction

Overview

The OneCommand™ Manager Command Line Interface (CLI) utility is a comprehensive management utility for Emulex host bus adapters (HBAs) and universal converged network adapters (UCNAs). The CLI provides support for commonly used commands without requiring installation of the OneCommand Manager graphical user interface (GUI). The OneCommand Manager CLI console application name is HbaCmd. A single operation is performed by entering "hbacmd", followed by a CLI client command and its possible parameters, at the command line.

Use the OneCommand Manager application to do any of the following:

- Discover local and remote Emulex and OEM branded Emulex adapters, as well as hosts, targets, virtual ports, virtual machines and logical unit numbers (LUNs) over FC or TCP/IP
- Manage local, FC remote and TCP/IP-accessed adapters
- Remote TCP/IP management of adapters on IPv6 hosts
- Discover, log in to, and log out from iSCSI targets
- Manage Emulex FC, iSCSI, FCoE and NIC-Only Universal Converged Network Adapters (UCNAs)
- Manage OneConnect OCe11100 series adapters (NIC and iSCSI only)
- Manage adapters on VMware ESX servers through the Common Information Model (CIM) interface
- Manage a UCNA's DCB (Data Center Bridging) settings
- Manage a UCNA's Fibre Channel over Ethernet (FCoE) Initialization Protocol (FIP)
- Manage adapter licenses
- Manage protocol personalities
- Group hosts for easier parameter configuration and firmware download
- Retrieve adapter dump files from remote hosts
- Change an adapter's World Wide Port Name (WWPN) and World Wide Node Name (WWNN)
- Reset adapter ports
- Configure persistent binding on FC targets
- Set FC/FCoE adapter driver parameters simultaneously to multiple adapters using Batch Update
- Update firmware and FC boot code (x86 BootBIOS, OpenBoot, or EFIBoot) on a single adapter or multiple adapters using Batch Update
- Set global FC/FCoE driver parameters
- Enable or disable adapter boot (x86 BootBIOS, FCode, EFIBoot, or PXE Boot)
- Run diagnostic tests on adapters

- Locate adapter ports using beaconing
- Mask and unmask FC LUNs
- Perform authentication using the Fibre Channel Security Protocol Diffie-Hellman Challenge Handshake Authentication Protocol (FC-SP DHCHAP)
- Create and delete FC virtual ports through N_Port_ID virtualization (NPIV)
- View FC virtual ports and virtual machine mapping information
- Configure FC boot from SAN
- Modify an IP port number of the remote management agent
- View vital product data (VPD) for the selected adapter port
- View transceiver information for the selected adapter port
- View iSCSI target session information
- View vNIC data for supported adapters
- Create and save reports about discovered SAN elements
- Supports COMSTAR (COmmon Multiprotocol SCSI TARget) for Solaris 11 enabling the Emulex FC driver for Solaris (EMLXS) to make a host appear as a target to the SAN. (COMSTAR ports are supported on Solaris 11 with LightPulse FC HBAs only.)
- Supports Universal Multichannel (UMC) configuration.

Compatibility

The OneCommand Manager application can be installed on multiple operating systems: Windows, Linux, Solaris, and VMware ESX and ESXi.

For VMware ESXi 4.1, ESXi 5.0, and ESXi 5.1 hosts, you can manage adapters using the OneCommand Manager on Windows, but you must install and use the appropriate Emulex CIM Provider.

Note: For VMware ESXi 5.0 and ESXi 5.1 hosts, when advanced adapter management capabilities are required (for example, iSCSI Management and port disable), use the OneCommand Manager for VMware vCenter software plug-in. For more details, see the *OneCommand Manager for VMware vCenter User Manual*.

For supported versions of operating systems, platforms, and adapters, see the Emulex website.

Abbreviations

ARP	address resolution protocol
ASIC	application-specific integrated circuit
BIOS	basic input-output system
CEE	Converged Enhanced Ethernet
CHAP	Challenge Handshake Authentication Protocol

CIM	Common Interface Model
CIMOM	Common Information Model Object Manager
CIN	Cisco, Intel, Nuova (data center bridging exchange)
CLI	command line interface
COS	console operating system
CSV	comma-separated values
DAC	direct-attach copper
D_ID	destination ID
DCB	data center bridging
DCBX	data center bridging exchange
DH	Diffie-Hellman
DHCHAP	Diffie-Hellman Challenge Handshake Authentication Protocol
FAT	File Allocation Table
FC	Fibre Channel
FCoE	Fibre Channel over Ethernet
FIP	FCoE Initialization Protocol
GUI	graphical user interface
HBA	host bus adapter
ICMP	Internet Control Message Protocol
IP	Internet Protocol
iSCSI	internet Small Computer System Interface
iSNS	internet Storage Name Server
LACP	Link Aggregation Control Protocol
LLDP	link layer discovery protocol
LPFC	LightPulse Fibre Channel
LUN	logical unit number
MAC	media access control
MSI	message signaled interrupts
MTU	maximum transmission unit
NFS	network file system
NIC	network interface card (or controller)
NVP	normal velocity of propagation
PFC	priority-based flow control
PGID	priority group ID
PGBW	priority group bandwidth
PHY	physical layer
POST	power-on self-test

PXE	Pre-boot Execution Environment
RHEL	Red Hat Enterprise Linux
RM	remote management
RPM	resource package manager
SAN	storage area network
SCSI	Small Computer System Interface
SFCB	Small Footprint CIM Broker
SFP	small form factor pluggable
SLES	SUSE Linux Enterprise Server
SR-IOV	single root I/O virtualization
SSH	Secure Shell
TCP	Transmission Control Protocol
TDR	time-domain reflectometer
UCNA	universal converged network adapter
UEFI	Unified Extensible Firmware Interface
VPD	vital product data
VPort	virtual port
WWN	world wide name
WWNN	world wide node name
WWPN	world wide port name
VM	virtual machine
XML	extensible markup language

2. Installing and Uninstalling the CLI

This chapter details prerequisites and procedures for installing and uninstalling the OneCommand Manager CLI in the following operating systems: Linux, Solaris, VMware ESX/ESXi, and Windows. It also describes the procedure for starting and stopping daemon processes.

Linux

Citrix

Citrix is based on CentOS Linux, however, for the OneCommand Manager CLI, Citrix is more comparable to VMware – a hypervisor-style server for managing virtual machines. Citrix XenServer 5.6 SP2 and Citrix XenServer 6.0 operating systems contain the OneCommand Manager CLI application. No additional installation is required.

Note: Updated versions of OneCommand Manager CLI for Citrix XenServer are available as part of the Device Update Driver kit for Citrix XenServer 5.6 SP2 and Citrix XenServer 6.0. For the latest kit, see the Emulex website.

Note: The OneCommand Manager application Web Launch Interface is not supported on Citrix XenServer.

Installing in Linux Without an Existing OneCommand CLI Kit

For new systems, before installing the OneCommand Manager CLI, install the specific Linux driver rpm file.

Note: On RHEL 5.5 and later and RHEL 6 and later, the OneCommand Core rpm file requires the "Libnl" library. This library is not installed by default, but can be obtained from the operating system distribution media.

- For i386 RHEL 5.5, RHEL 5.6, and RHEL 6, use the 32bit libnl library.
- For x86_64 RHEL 5.5, RHEL 5.6, and RHEL 6, use the 64bit libnl library.
- For ia64 RHEL 5.5, RHEL 5.6, and RHEL 6, use the 64bit libnl library.
- For PPC RHEL 5.5, RHEL 5.6, and RHEL 6, use the 32bit libnl library.

For existing systems, before installing the OneCommand Manager CLI, download the appropriate Linux driver from the Emulex website, and install it. If specified, also download and install the appropriate library file. For example,

- On OneConnect FCoE adapters:
  - For RHEL 5 and SLES 10 operating systems, use Linux driver version 8.2.0.33.3p, or later.
  - For RHEL 6 (and later versions) and SLES 11 SP1 (and later versions) operating systems, use Linux driver version 8.3.5. Also, the RHEL 6 Enterprise kit requires the installation of the libstdc++-5.so library. This library is available through the compat-libstdc++-33-3.2.3-68.<arch>.rpm or

later. The PPC64 and x86_64 builds require the 64-bit version installed, which is installed in /usr/lib64.The i386 build requires the 32-bit version installed which is installed in /usr/lib.

- On OneConnect NIC adapters (including iSCSI-NIC and FCoE-NIC adapters), use the NIC driver.

To install the OneCommand Manager CLI in Linux without an existing OneCommand CLI:

1. Copy the applications kit tar file to a directory on the installation machine.
2. Change to the directory where you copied the tar file.
3. Untar the file:

   ```
   tar zxvf elxocmcore-<supported_os>-<app_ver>-<rel>.tgz
   ```

4. Change to the core kit directory created in step 3.

   ```
   cd elxocmcore-<supported_os>-<app_ver>-<rel>
   ```

5. Run the install.sh script.

   ```
   ./install.sh
   ```

The core kit consists of two or three rpm files for each supported architecture and each supported version of Linux. For example:

- elxocmlibhbaapi-*.rpm (on 64-bit platforms that support 32-bit applications, there are two of these files)
- elxocmcore-*.rpm

Installing in Linux With an Existing OneCommand CLI Kit

Before installing the OneCommand Manager CLI, download the appropriate driver from the Emulex website and install the driver. For example:

- On OneConnect FCoE adapters:
  - For RHEL 5.5and later and SLES10 SP3 and later operating systems, use Linux driver version 8.2.0.x.
  - For RHEL6 and later and SL11 SP1 and later operating systems, use Linux driver version 8.3.5.x.
- On OneConnect iSCSI adapters, use the iSCSI driver.
- On OneConnect NIC adapters (including iSCSI-NIC and FCoE-NIC adapters), use the Ethernet driver.

Note: The OneCommand Manager core kit cannot be installed if a previous version of the HBAnyware utility is installed.

You have two options when installing the OneCommand Manager CLI on a Linux system with an existing OneCommand CLI kit:

- Updating an existing installation – preserve existing settings
- Performing a clean install – overwrite existing settings

Updating (Preserving Existing Settings)

To update the OneCommand Manager CLI and preserve settings, you must install the current core kit as detailed in "Installing in Linux Without an Existing OneCommand CLI Kit" on page 13. The ".rpm" file handles the configuration file update. The install script executes an rpm update (rpm -U *.rpm) to update the installed version of the core kit to the current version.

Note: There is no update path from an HBAnyware 4.x or 3.x core kit to a OneCommand Manager 5.1 or later core kit. You must un-install previous versions of the HBAnyware utility before installing a OneCommand Manager core kit. For information on uninstalling older versions of HBAnyware, see "Uninstalling Older HBAnyware Kits in Linux" on page 15.

Performing a Clean Install (Removing Existing Settings)

1. Uninstall the existing OneCommand Manager CLI using the uninstall script included in the tar file or in /usr/sbin/ocmanager/scripts directory.

   Note: If an HBAnyware CLI or enterprise kit is installed, follow the procedure for "Uninstalling Older HBAnyware Kits in Linux" on page 15.

   Note: Your configuration files are backed up by rpm with an ".rpmsave" extension.

2. Install the specific rpm file for your driver for Linux version. For information on installing the rpm file, see "Installing in Linux Without an Existing OneCommand CLI Kit" on page 13.

Uninstalling in Linux

To uninstall the OneCommand Manager CLI in Linux:

1. Log in as "root".
2. Do one of the following:
   - Run the uninstall_ocmanager.sh script located in /usr/sbin/hbanyware/scripts.
   - Run the uninstall.sh script located in the installation tar file.

Uninstalling Older HBAnyware Kits in Linux

Uninstalling an Older HBAnyware Core Kit

1. Run the following command to remove the core kit.

   ```
   rpm -e elxlinuxcorekit
   ```

Uninstalling an Older HBAnyware Enterprise Kit

1. Do one of the following:
   - Run the uninstall script located in /usr/sbin/hbanyware/scripts to remove the enterprise kit.

- Run the uninstall script located in the tar file to remove the enterprise kit.

If the HBAnyware Security Configurator is installed, you must uninstall it before uninstalling the HBAnyware configuration utility. You must use the uninstall script that shipped with the version of OneCommand Security Configurator you want to remove and proceed to step 2. If the Security Configurator is not installed, proceed to step 3.

2. If the HBAnyware Security Configurator is installed, follow these steps:
   a. Log on as "root".
   b. Change to the directory containing the tar file.
   c. Extract the tar file using the tar -xvf command.
   d. Change to the newly created directory.
   e. Run the uninstall script with the ssc parameter specified. Type
      ```
      ./uninstall ssc
      ```
3. Uninstall the HBAnyware utility and the Application Helper module:
   a. Log on as "root".
   b. Change to the directory containing the tar file.
   c. Extract the tar file using the tar -xvf command.
   d. Change to the newly created directory.
   e. Uninstall any previously installed versions. Type
      ```
      ./uninstall
      ```

Solaris

Installing in Solaris

Before installing the OneCommand Manager CLI, install the appropriate driver:

- For FC/FCoE management, use the Solaris FC/FCoE driver version 2.60 or later.
- For UCNA management, use the Solaris OCE NIC driver version 1.0 or later.

Note: If Emulex OneConnect UNCAs are installed on the system, the NIC driver must be installed and reporting all NIC ports. Otherwise, the OneCommand Manager cannot manage the UNCAs.

To install the OneCommand Manager CLI in Solaris:

1. Copy the OneCommand Manager core kit to a temporary directory on the system.
2. Untar the core kit by typing
   ```
   tar xvf elxocmcore-solaris-<kit version>.tar
   ```
3. Change to the newly created elxocmcore-solaris-<kit version> directory:
   ```
   cd ./elxocmcore-solaris-<kit version>/
   ```
4. Run the install script and follow the instructions.
   ```
   ./install
   ```

If any of the following are already present on the system, the install script attempts to remove them first:

- HBAnyware utility
- OneCommand Manager core kit
- OneCommand Manager application enterprise kit
- Solaris driver utilities

Uninstalling in Solaris

To uninstall the OneCommand Manager CLI in Solaris:

1. Log in as "root".
2. Do one of the following:
   - Run /opt/ELXocm/scripts/uninstall.
   - Run the uninstall script located in the installation tar file.
   - Enter the command pkgrm ELXocmcore.

VMware ESX/ESXi

For installing and uninstalling the OneCommand Manager in VMware ESX, only VMware ESX 4.1 is supported.

For VMware ESXi 4.1, VMware ESXi 5.0, and ESXi 5.1 hosts, you must install and use the appropriate Emulex CIM Provider. See "Installing the CIM Provider for VMware ESXi Hosts" on page 19.

Installing in a New VMware ESX Server

To install the OneCommand Manager CLI in a new VMware ESX system, install the specific rpm file for the driver for your VMware ESXversion.

The prerequisites for installation include the following:

- To manage FCoE adapters, the LPFC driver version 8.2, or later, must be loaded.
- To manage NIC or iSCSI adapters, driver version 2.102.440.0, or later, must be loaded.
- To manage iSCSI adapters, the iSCSI driver must be loaded.

To install the OneCommand Manager CLI:

1. Log in to the VMware ESX server COS.
2. Copy the elxocmcore-esxNN-<kit version>.<arch>.rpm file to a directory on the install machine.
   - "NN" is the VMware ESX version. It is "41" for VMware ESX 4.1.
   - <kit version> represents the complete version.
   - <arch> is "x86_64" and is applicable to x64 or x86 architectures.
3. Change to the directory where you copied the rpm file.

4. Install the rpm file by typing

   ```
   rpm -Uvh elxocmcore-esxNN-<kit version>.<arch>.rpm
   ```

   - See the VMware ESX version, <kit version>, and <arch> parameter descriptions in step 2.

The rpm contents are installed in /usr/sbin/ocmanager. The OneCommand Manager CLI is also located in this directory.

Installing in a VMware ESX Server with an Existing HBAnyware or OneCommand Manager CLI

To install the OneCommand Manager CLI:

1. Install the rpm file:

   ```
   # rpm -Uvh elxocmcore-esxNN-<kit version>.<arch>.rpm
   ```

   - "NN" is the VMware ESX version. It is "41" for VMware ESX 4.1.
   - <kit version> represents the complete version.
   - <arch> is "x86_64" and is applicable to x64 or x86 architectures.

Uninstalling in a VMware ESX Server

To uninstall the OneCommand Manager CLI from a VMware ESX server:

1. Log in to the ESX server COS.
2. Type

   ```
   rpm -e elxocmcore-esxNN-<kit version>
   ```

   - "NN" is the VMware ESX version. It is "41" for a VMware ESX 4.1.

Uninstalling an Older HBAnyware or a OneCommand Manager Kit in a VMware ESX Server

To uninstall an older HBAnyware or OneCommand Manager from a VMware server:

1. Log in to the ESX server COS.
2. Type

   ```
   rpm -qa | grep elx
   ```

   Locate either of the following rpm files:

   ```
   elxvmwarecorekit-<kit version>
   elxocmcore-esxNN-<kit version>
   ```

   - "NN" is the VMware ESX version. It is "41" for VMware ESX 4.1.

3. Type one of the following:

   ```
   rpm -e elxvmwarecorekit-<kit version>
   rpm -e elxocmcore-esxNN-<kit version>
   ```

   - "NN" is the VMware ESX version. It is "41" for VMware ESX 4.1.

Installing the CIM Provider for VMware ESXi Hosts

For VMware ESXi 4.1, ESXi 5.0, and VMware ESXi 5.1 hosts, you can manage adapters using the OneCommand Manager on Windows, but you must install and use the appropriate Emulex CIM Provider.

VMware ESXi comes with an inbox Emulex CIM Provider. The inbox Emulex CIM Provider enables you to manage Emulex LightPulse adapters, but not Emulex UCNAs. To manage Emulex UCNAs, you must install the out-of-box Emulex CIM Provider.

The Emulex CIM Provider is available as an offline bundle in ESXi platforms. VMware recommends using the offline bundle to update software on VMware platforms. For more information about the ESX Patch Management activities, see the VMware website.

To install the Emulex CIM Provider in a VMware ESXi 4.1 hypervisor environment, use the esxupdate command line utility and perform the following steps:

1. Enable Secure Shell (SSH) on the VMware Visor host.
2. Transfer the Emulex CIM Provider zip file to the VMware hypervisor host.
3. Log into the VMware hypervisor host, and execute the following command all on one line:

```
esxupdate --bundle=vmware-esx-provider-emulex-cim-provider-410.3.6.10.1-235786.zip
--nosigcheck --maintenancemode update
```

To install the Emulex CIM Provider in a VMware ESXi 5.0 or ESXi 5.1 hypervisor environment, use the esxli command line utility and perform the following steps:

1. Copy the CIM provider zip file to /var/log/vmware.
2. Log into the VMware hypervisor host, and execute the following command all on one line:

```
esxcli software vib update -d
vmware-esx-provider-emulex-cim-provider-50.3.6.11.1-01.zip --no-sig-check
--maintenance-mode
```

3. Reboot the system.

Windows

Installing in Windows

There are two ways to install the OneCommand Manager CLI in Windows:

- Attended installation – you are present during the installation. You will be prompted for more information for the installation to continue.
- Unattended installation – you do not need to be present during the installation. Installation will complete on its own. Installation progress may be displayed as an option.

Attended Installation

To install the OneCommand Manager CLI, run the installation.exe file for a core Windows driver kit that does not include the OneCommand Manager GUI, and follow the installer directions.

Use the following syntax for the installation executable file:

```
elxocmcore-windows-<arch>-<kit version>.exe
```

- <arch> is either "x64" or "x86".
- <kit version> represents the complete kit version.

For example, at the command prompt, type

```
elxocmcore-windows-x64-5.0.2.14-1.exe
```

Note: For Itanium 64 systems, install the x86 kit.

Unattended Installation

To install the OneCommand Manager CLI in Windows unattended, use the following procedure:

1. From the Emulex website, download the x64 or x86 OneCommand Manager Core Kit installation file to your system.
2. Use the following syntax for the installation executable file:

   ```
   elxocmcore-windows-<arch>-<kit version>.exe <option>
   ```

   - <arch> is either "x64" or "x86".
   - <kit version> represents the complete kit version.
   - <option> is "/q" or "/q2". The kit is activated with this switch.
     - The "/q" option displays some progress reports.
     - The "/q2" switch does not display progress reports.

For example, at the command prompt, type

```
elxocmcore-windows-x64-5.01.00.10-4.exe /q2
```

Uninstalling in Windows

There are two ways to uninstall the OneCommand Manager CLI in Windows:

- Through the control panel
- Through the command line

Uninstalling through the Control Panel

To uninstall the OneCommand Manager CLI in Windows through the control panel:

1. In Windows 2008 and Windows 2008 R2, select **Start > Control Panel > Programs > Uninstall a Program.**
2. If present, select **Emulex Common SAN Management [version],** and click **Remove** or **Uninstall**. Click **Yes**.

The Emulex Common SAN Management components are removed from the system.

3. Select **Emulex OCManager CLI[version]** and click **Remove** or **Uninstall**.

Uninstalling through the Command Line

To uninstall the OneCommand Manager CLI in Windows through the command line:

1. Change to the appropriate uninstall directory:
   ```
   cd <Install Location>\Emulex\Util\Uninstall
   ```
2. Type
   ```
   uninstall_OCManager_Core.bat
   ```

Starting and Stopping Daemon Processes

Linux and Solaris

On Linux machines, you can stop and start the OneCommand Manager daemon processes using the "stop_ocmanager". On Solaris machines, use the "start_ocmanager" script. These are found in the following OneCommand Manager installation directory:

- Linux – /usr/sbin/ocmanager
- Solaris – /opt/ELXocm

There are three basic daemon processes, included with OneCommand Manager installations, that are affected by these scripts. They are:

- elxhbamgrd – Remote management daemon which services requests from OneCommand Manager clients running on remote host machines.
- mili2d – MILI daemon that routes major portions of the local OneCommand Manager client UCNA management requests.
- elxdiscoveryd – Discovery daemon responsible for maintaining all discovery data (remote and local) for OneCommand Manager clients running on the local machine.

The elxhbamgrd and mili2d processes start at system boot time. The elxdiscoveryd process starts whenever the OneCommand Manager GUI process first runs on the host machine. Additionally, if the WebLaunch component of OneCommand Manager is installed, the daemon process, rmiserver, starts at system boot time. The start_weblaunch and stop_weblaunch scripts start and stop this daemon.

VMware ESX Server

Starting Daemon Processes

To start the OneCommand Manager daemon in VMware ESX 4.1:

1. Log in as "root".
2. Change to the OneCommand Manager directory:

```
cd /usr/sbin/ocmanager/
```

3. Start the OneCommand Manager daemon:

```
./start_ocmanager
```

Stopping Daemon Processes

To stop the OneCommand Manager daemon in VMware ESX 4.1:

1. Log in as “root”.
2. Go to the OneCommand Manager directory:

```
cd /usr/sbin/ocmanager/
```

3. Stop the OneCommand Manager daemon:

```
./stop_ocmanager
```

3. Updating to the OneCommand Manager Application Enterprise Kit

Note: The full-featured OneCommand Manager application enterprise kit is not supported on Citrix XenServer 5.6 SP2, Citrix XenServer 6.0, or VMware ESX server.

This chapter details procedures for updating the OneCommand Manager CLI to the OneCommand Manager Application Enterprise kit in Linux, Solaris, and Windows operating systems. An update can be performed only if the version of the OneCommand Manager application enterprise kit is the same or later than the OneCommand Manager CLI version.

Note: You cannot update a OneCommand Manager CLI with a previous version of the OneCommand Manager application enterprise kit.

When the OneCommand Vision Sensor software is installed on production servers with Emulex adapters, the Sensor software may load and use some of the software components included in the OneCommand Manager application or HBAnyware utility software stacks. It is essential that the OneCommand Vision Sensor software be stopped before performing any updates to the OneCommand Manager application or HBAnyware software stack components. For information on stopping the OneCommand Vision Sensor, see the latest *Emulex OneCommand Vision Installation and Configuration Manual*.

Linux

To update from the OneCommand Manager CLI to the full-featured OneCommand Manager application enterprise kit in Linux, run the install.sh script of the OneCommand Manager application enterprise kit.

The install script executes an rpm update (rpm -U *.rpm) to update the installed core kit to an enterprise kit.

Solaris

To update from the OneCommand Manager CLI to the full-featured OneCommand Manager application enterprise kit in Solaris:

1. Download the OneCommand Manager application enterprise kit to a temporary directory on your system.
2. Untar the OneCommand Manager application enterprise kit tar file:

   ```
   tar xvf elxocm-solaris-<kit version>.tar
   ```

3. Change to the newly created elxocm-<kit version> directory:

   ```
   cd ./elxocm-solaris-<kit version>/
   ```

4. Run the install script and follow the instructions:

   ```
   ./install
   ```

Windows

To update from the OneCommand Manager CLI to the full-featured OneCommand Manager application enterprise kit in Windows:

1. From the desktop, run the "elxocm-windows--<kit version>.exe" file that contains the full application kit.

   Running this executable file removes the OneCommand Manager CLI and installs a full-featured version of the OneCommand Manager application that includes the CLI and the GUI.

4. CLI Client Command Usage

Overview

The CLI Client component of the OneCommand Manager application provides access to the capabilities of the Remote Management (RM) library or the CIM interface from a console command prompt to get the management information. The CLI Client is intended for use in scripted operations from within shell scripts or batch files. The CLI Client is a console application named HbaCmd. A single operation is performed by entering "hbacmd", followed by a CLI client command and its possible parameters, at the command line. For example:

```
hbacmd <command> [parameters]
```

When the specified operation is completed, the command prompt is displayed. For a majority of commands, the first parameter following the command is the WWPN or MAC address of the port that the command is to act upon.

CLI in Read-Only Mode May Cause Error Message

Note: The CLI does not allow the execution of certain commands when it is configured for read-only mode. The following error message is returned if such a command is attempted:

```
Error: Read-only management mode is currently set on this host.
The requested command is not permitted in this mode.
```

HbaCmd Syntax Usage

The following syntax rules and usage are applicable for the HbaCmd application:

- Parameters denoted within angle brackets < > are required.
- Parameters denoted within square brackets [ ] are optional.
- For Linux, Solaris, and VMware ESX (which are case-sensitive), program names must be in lowercase letters, therefore, the command line must begin with "hbacmd" (rather than "HbaCmd"). Windows is not case-sensitive, so the program name is not required to be in all lowercase letters.
- An optional IP address or host name can be specified using the "h" option with the following syntax:

  ```
  hbacmd [h=IP_Address[:port] | Hostname[:port]] <command> [parameters]
  ```

  - If the "h" option is omitted, the command is run on the local host.
  - If the "h" option is specified, the command is sent to the specified remote host (assuming it is specified correctly, the remote host is up, and the remote host is running the OneCommand Manager remote management agent.
  - The ":port" option is optional. If omitted, the OneCommand Manager remote management protocol uses the default TCP port. If specified, it uses the user-specified TCP port.

- Examples:

  Using the IP address:

  ```
  hbacmd h=138.239.91.121 ListHBAs
  ```

  Using the host name:

  ```
  hbacmd h=cp-hp5670 ListHBAs
  ```

- The "h" option is available for all commands except for the AddHost (page 98), RemoveHost (page 102), and the Version (page 104) commands.

- For FC ports, the WWPN of the adapter must be specified. Where the WWPN is specified, each pair of numbers within the WWPN is separated by colons (:) or spaces ( ). When using space separators, the entire WWPN must be enclosed in quotes (" "). For example, the following command displays the port attributes for the adapter with the specified WWPN:

  ```
  hbacmd PortAttributes 10:00:00:00:c9:20:20:20
  ```

- For iSCSI and NIC ports, the MAC address must be specified. Where a MAC address is specified, each pair of numbers within the MAC address is separated by a dash (-). For example, the following command sets the target properties for the UCNA port with the specified MAC address with an extended timeout value of "1":

  ```
  hbacmd SetTargetProperties 00-11-22-33-44-55 iscsiTarget 1
  ```

- For NIC ports, only the permanent MAC address is supported for the port address parameter on an HbaCmd command line.

  Normally, for a UCNA port, the port's permanent MAC address and current MAC address parameters are equal. However, it is possible to set a user-specified (current) MAC Address that is different from the permanent MAC address. Also, for some implementations, it is possible to have multiple UCNA ports with the same current MAC addresses, but with unique permanent MAC addresses. Therefore, to ensure that the OneCommand Manager can access the correct port, only the permanent MAC address is supported. Note that both the permanent MAC address and the current MAC address are displayed by using the ListHBAs command. See "ListHBAs" on page 102.

CIM Interface

Notes:

- In Linux and Solaris, you cannot use hbacmd as a CIM client.
- The OneCommand Manager CLI running on the VMware ESX 4.1 COS does not support the management of adapters using the CIM interface.

Device Management Using the CIM Interface

VMware on the hypervisor-based ESXi platforms use the CIM as the only standard management mechanism for device management.

For VMware ESXi 4.1,VMware ESXi 5.0, and VMware ESXi 5.1 hosts, you can manage adapters using the OneCommand Manager on Windows, but you must install and use the appropriate Emulex CIM Provider. For installation, see "Installing the CIM Provider for VMware ESXi Hosts" on page 19.

Note: For VMware ESXi 5.0 and 5.1 hosts, when advanced adapter management capabilities are required (for example, iSCSI Management and port disable), use the OneCommand Manager for VMware vCenter software plug-in. For more details, see the *OneCommand Manager for VMware vCenter User Manual*.

Syntax Rules for the CIM Interface

For the CIM interface, all the syntax rules in "HbaCmd Syntax Usage" on page 25 section apply, except that the "h" option is required. Additionally, the "m=cim" parameter is required in the command line for getting the data from the ESXi host. For example:

```
hbacmd <h=IP_Address[:port]> m=cim u=root p=<password> n=<namespace>
InstallAdapterLicense 00-12-34-56-78-9A K:\lf1324.lic
```

Note: If you specify the parameter "m=cim", the CLI uses the CIM interface to talk to the CIM server running on ESXi to get the management information. If you do not specify the parameter "m=cim", the CLI uses the RM interface to talk to the RM server to get the management information.

Syntax Options and Setting CIM Credentials

For issuing CIM-based commands, two main syntax options are available.

Option A

```
hbacmd <h=IP_Address[:port]> m=cim [u=userid] [p=password]
[n=root/emulex] <command> <WWPN>
```

Option B

```
hbacmd <h=IP_Address[:port]> <m=cim> <command>
```

Before using the option B syntax, you must set the CIM credentials by doing one of the following:

- Set the default CIM credentials using the SetCimCred command (see page 103). This command sets only the CIM credentials. Once you have set them, subsequent HbaCmd commands do not require you specify the CIM credentials on the command line. For example:

  ```
  hbacmd SetCimCred <username> <password> <namespace>
  <portnum>
  ```

- Add the host IP address with CIM credentials using the AddHost command. For example:

  ```
  hbacmd <m=cim> [u=userid] [p=password] [n=namespace]
  AddHost <IP_Address>
  ```

Default CIM Credentials

If you specify the command with the discovery method "m=cim" without specifying the CIM credentials (userid, password, or namespace), the default value for the missing CIM credential is obtained in the following order:

1. The information entered using the addhost command is looked up.
2. If no values exist, the information entered using the setcimcred command is used.
3. If no values exist, the following defaults are used:

```
username=root
password=root
namespace=root/emulex
portnum=5988
```

Example of Using the CIM Interface to Display Adapters

In Windows, to display a list of adapters managed for a specified host using the CIM interface, run the following command:

```
C:\Program Files\Emulex\Util\OCManager>hbacmd h=10.192.113.128
m=cim u=root p=root n=root/emulex listhbas
```

The output displayed is similar to the following example:

```
Manageable HBA List

Port WWN: 10:00:00:00:c9:6b:62:2b
Node WWN: 20:00:00:00:c9:6b:62:2b
Fabric Name: 00:00:00:00:00:00:00:00
Flags: 00000000
Host Name: eng.ma.emulex.com
Mfg: Emulex Corporation
Serial No.: BG73539764
Port Number: n/a

Mode: Initiator
Discovery: cim

Port WWN: 10:00:00:00:c9:6b:62:59
Node WWN: 20:00:00:00:c9:6b:62:59
Fabric Name: 00:00:00:00:00:00:00:00
Flags: 00000000
Host Name: eng.ma.emulex.com
Mfg: Emulex Corporation
Serial No.: BG73539764
Port Number: n/a
```

```
Mode: Initiator
Discovery: cim

C:\Program Files\Emulex\Util\OCManager>hbacmd h=10.192.113.128
m=cim u=root p=root n=root/emulex portattributes
10:00:00:00:c9:6b:62:2b

Port Attributes for 10:00:00:00:c9:6b:62:2b

Node WWN: 20 00 00 00 c9 6b 62 2b
Port WWN: 10 00 00 00 c9 6b 62 2b
Port Symname:
Port FCID: 0000
Port Type: Fabric
Port State: Unknown
Port Service Type: 12
vNIC Name:
vNIC Outer VLAN ID:
vNIC Min. Bandwidth:
vNIC Max. Bandwidth:
Port Supported FC4: 00 00 01 20 00 00 00 01
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
Port Active FC4: 00 00 01 00 00 00 00 01
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
   00 00 00 00 00 00 00 00
Max Frame Size: 2048
OS Device Name:
Num Discovered Ports: 0
Fabric Name: 00 00 00 00 00 00 00 00
```

For a list of HbaCmd commands supported through the CIM interface, see the following section.

CLI Client Commands Supported in CIM Interface

Following is a list of HbaCmd commands supported through the CIM interface.

- AddHost
- AllNodeInfo
- CEEDownload
- ChangePersonality

- ChangeWWN
- DeleteDumpFiles
- Download
- Dump
- EnableBootCode
- GetBeacon
- GetDCBParams
- GetDriverParams
- GetDriverParamsGlobal
- GetDumpDirectory
- GetDumpFile
- GetDumpFileNames
- GetFCFInfo
- GetFIPParams
- GetLunList
- GetPGInfo
- GetQosInfo
- GetRetentionCount
- GetVPD
- GetWWNCap
- GetXcvrData
- HbaAttributes
- InstallAdapterLicense
- ListHBAs
- LoadList
- LoopBackTest
- PciData
- PortAttributes
- PortStatistics
- ReadWWN
- RemoveHost
- Reset
- RestoreWWN
- ServerAttributes
- SetBeacon
- SetCnaPGBW
- SetDCBParam
- SetDCBPriority
- SetDriverParam

- SetDriverParamDefaults
- SetDumpDirectory
- SetFIPParam
- SetPFCthrottle
- SetPhyPortSpeed
- SetRetentionCount
- ShowAdapterLicenseFeatures
- ShowLicenseAdapterID
- ShowPersonalities
- UmcEnable
- UmcEnableChanLink
- UmcGetParams
- UmcSetBw
- UmcSet LPVD
- TargetMapping
- Version

CIM Provider 3.0

CIM Provider 3.0 supports the following commands:

- Download
- ChangeWWN
- GetWWNCap
- GetXcvrData
- LoadList
- Loopbacktest
- GetBeacon
- SetBeacon
- ReadWWN
- Reset
- RestoreWWN

CIM Provider 3.1

CIM Provider 3.1 supports the following commands:

- All the commands listed in the previous section for "CIM Provider 3.0" on page 31.
- Dump
- GetDCBParams
- GetDumpDirectory
- GetDumpFile

- GetDumpFileNames
- GetFCFInfo
- GetFipParams
- GetRetentionCount
- GetPGInfo
- SetDCBParam
- SetCnaPgBw
- SetDCBPriority
- SetDumpDirectory
- SetFIPParam
- SetRetentionCount

CIM Provider 3.2

CIM Provider 3.2 supports the following commands:

- All the commands listed in the previous section for "CIM Provider 3.1" on page 31.
- ChangePersonality
- InstallAdapterLicense
- ShowAdapterLicenseFeatures
- ShowLicenseAdapterID
- ShowPersonalities

CIM Provider 3.4.4

CIM Provider 3.4.4 supports the following commands:

- All the commands listed in the previous section for "CIM Provider 3.2" on page 32.
- SetCableNVP

CIM Provider 3.5

CIM Provider 3.5 supports the following commands:

- All the commands listed in the previous section for "CIM Provider 3.4.4" on page 32.
- SetPhyPortSpeed

Commands Supported in Target-Mode Ports

The following HbaCmd commands are supported for managing target-mode ports:

- ChangePersonality
- CreateVPort
- DeleteDumpFiles

- DeleteVPort
- Download
- DriverConfig
- ExportSanInfo
- GetDCBParams
- GetDriverParams
- GetDriverParamsGlobal
- GetDumpDirectory
- GetDumpFile
- GetFCFInfo
- GetFIPParams
- GetPGInfo
- GetRetentionCount
- GetVPD
- GetXcvrData
- HbaAttributes
- InstallAdapterLicense
- ListHbas
- ListVPorts
- PortAttributes
- PortStatistics
- Reset
- SaveConfig
- ServerAttributes
- SetCnaPGBW
- SetDCBParam
- SetDCBPriority
- SetDriverParam
- SetDriverParamDefaults
- SetFIPParam
- SetPhyPortSpeed
- SetPortEnabled
- SetRetentionCount
- ShowAdapterLicenseFeatures
- ShowLicenseAdapterID
- ShowPersonalities

All other HbaCmd commands return the following error message:

```
"Not Supported for Target Mode Adapters."
```

Unsupported Commands per Operating System

For a list of all the supported commands, see Table 5-1, CLI Client Command Reference, on page 37.

Linux

RHEL, SLES, and Oracle

RHEL, SLES, and Oracle do not support the following CLI commands:

- BindingCapabilities
- BindingSupport
- GetCimCred
- GetLunUnMaskByHBA
- GetLunUnMaskByTarget
- ListVMs
- PersistentBinding
- RemoveAllPersistentBinding
- RemovePersistentBinding
- SetBindingSupport
- SetCimCred
- SetDumpDirectory
- SetLunMask
- SetPersistentBinding

Citrix

Citrix (acting as a hypervisor-style server for OneCommand Manager CLI) does not support the following CLI commands:

- AuthConfigList
- BindingCapabilities
- BindingSupport
- CreateVPort
- DeleteVPort
- GetAuthConfig
- GetAuthStatus
- GetCimCred
- GetElxSecInfo
- GetLunList
- GetLunUnMaskByHBA
- GetLunUnMaskByTarget
- InitiateAuth

- PersistentBinding
- RemoveAllPersistentBinding
- RemovePersistentBinding
- RescanLuns
- SetAuthConfig
- SetBindingSupport
- SetCimCred
- SetPersistentBinding
- SetLunMask
- SetPassword

Solaris

Solaris does not support the following CLI commands:

- CnaClearEventLog
- CnaGetEventLog
- DriverConfig
- GetCimCred
- GetElxSecInfo
- ListVMs
- SetCimCred
- SetDriverParamDefaults
- SetDumpDirectory

VMWare ESX

VMWare ESX does not support the following CLI commands:

- AuthConfigList
- BindingCapabilities
- BindingSupport
- CreateVPort
- DeleteAuthConfig
- DeleteVPort
- GetAuthConfig
- GetAuthStatus
- GetCimCred
- GetElxSecInfo
- GetLunList
- GetLunUnMaskByHBA
- GetLunUnMaskByTarget
- ImportSCSI

- InitiateAuth
- PersistentBinding
- RemoveAllPersistentBinding
- RemovePersistentBinding
- RescanLuns
- SetAuthConfig
- SetBindingSupport
- SetCimCred
- SetLunMask
- SetPersistentBinding
- SetPassword

Windows

Windows does not support the following CLI commands:

- SetDumpDirectory
- ListVMs

5. CLI Client Command Descriptions

A check mark (✓) designates a supported command for a particular operating system, CIM interface, and some CIM provider versions.

Table 5-1 CLI Client Command Reference

Command	Linux	Solaris	VMWare ESX	Windows	CIM	CIM Provider					Page
						3.0	3.1	3.2	3.4.4	3.5	
AddARPTableEntry	✓	✓	✓	✓							77
AddHost	✓	✓	✓	✓	✓						98
AddRouteTableEntry	✓	✓	✓	✓							77
AddTarget	✓	✓	✓	✓							78
AddTargetPortal	✓	✓	✓	✓							79
AllNodeInfo	✓	✓	✓	✓	✓						105
AuthConfigList	✓	✓		✓							50
BindingCapabilities		✓		✓							105
BindingSupport		✓		✓							106
ChangePersonality	✓	✓	✓	✓	✓			✓	✓	✓	109
ChangeWWN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	118
ClearSNSServer	✓	✓	✓	✓							80
CnaClearEventLog	✓		✓	✓							98
CnaGetEventLog	✓		✓	✓							99
CreateVPort	✓	✓		✓							115
DelARPTableEntry	✓	✓	✓	✓							81
DeleteAuthConfig	✓	✓		✓							51
DelRouteTableEntry	✓	✓	✓	✓							81
DeleteDumpFiles	✓	✓	✓	✓	✓						70
DeleteVPort	✓	✓		✓							115
DiscoverSNSServer	✓	✓	✓	✓							81
Download	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	99
DriverConfig	✓		✓	✓							68
Dump	✓	✓	✓	✓	✓		✓	✓	✓	✓	71
EchoTest	✓	✓	✓	✓							61
EnableBootCode	✓	✓	✓	✓	✓						54
EnableSRIOV	✓	✓	✓	✓							116

Table 5-1 CLI Client Command Reference (Continued)

Command	Linux	Solaris	VMWare ESX	Windows	CIM	CIM Provider					Page
						3.0	3.1	3.2	3.4.4	3.5	
ExportSANInfo	✓	✓	✓	✓							100
ExportiSCSI	✓	✓	✓	✓							82
GetBeacon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	61
GetAuthConfig	✓	✓		✓							51
GetAuthStatus	✓	✓		✓							51
GetBootParams	✓	✓	✓	✓							55
GetCimCred				✓							100
GetDCBParams	✓	✓	✓	✓	✓		✓	✓	✓	✓	56
GetDriverParams	✓	✓	✓	✓	✓						68
GetDriverParamsGlobal	✓	✓	✓	✓	✓						68
GetDumpDirectory	✓	✓	✓	✓	✓		✓	✓	✓	✓	71
GetDumpFile	✓	✓	✓	✓	✓		✓	✓	✓	✓	72
GetDumpFileNames	✓	✓	✓	✓	✓		✓	✓	✓	✓	73
GetElxSecInfo	✓			✓							101
GetFCFInfo	✓	✓	✓	✓	✓		✓	✓	✓	✓	75
GetFIPParams	✓	✓	✓	✓	✓		✓	✓	✓	✓	75
GetInitiatorProperties	✓	✓	✓	✓							82
GetiSCSILuns	✓	✓	✓	✓							82
GetiSCSIPortStats	✓	✓	✓	✓							83
GetLunList	✓	✓		✓	✓						96
GetLunUnMaskByHBA		✓		✓							96
GetLunUnMaskByTarget		✓		✓							97
GetNetwork Configuration	✓	✓	✓	✓							83
GetPGInfo	✓	✓	✓	✓	✓		✓	✓	✓	✓	56
GetQosInfo	✓	✓	✓	✓	✓						101
GetRetentionCount	✓	✓	✓	✓	✓		✓	✓	✓	✓	73
GetSessionInfo	✓	✓	✓	✓							83
GetVPD	✓	✓	✓	✓	✓						101
GetWWNCap	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	119
GetXcvrData	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	62

Table 5-1 CLI Client Command Reference (Continued)

Command	Linux	Solaris	VMWare ESX	Windows	CIM	CIM Provider					Page
						3.0	3.1	3.2	3.4.4	3.5	
HbaAttributes	✓	✓	✓	✓	✓						47
Help	✓	✓	✓	✓							42
ImportiSCSI	✓	✓		✓							84
InitiateAuth	✓	✓		✓							52
InstallAdapterLicense	✓	✓	✓	✓	✓			✓	✓	✓	45
iSCSIPing	✓	✓	✓	✓							85
ListHBAs	✓	✓	✓	✓	✓						102
ListSessions	✓	✓	✓	✓							85
ListVFunctions	✓	✓	✓	✓							116
ListVMs	✓		✓								117
ListVPorts	✓	✓	✓	✓							117
VPortTargets	✓	✓	✓	✓							118
LoadList	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	62
LoopBackTest	✓	✓	✓	✓							63
LoopMap	✓	✓	✓	✓							64
PciData	✓	✓	✓	✓	✓						64
PersistentBinding		✓		✓							106
PortAttributes	✓	✓	✓	✓	✓						47
PortStatistics	✓	✓	✓	✓	✓						47
PostTest	✓	✓	✓	✓							65
ReadWWN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	120
RemoveAllPersistent Binding		✓		✓							106
RemovePersistent Binding		✓		✓							107
RemoveHost	✓	✓	✓	✓	✓						102
RemoveTarget	✓	✓	✓	✓							85
RemoveTargetPortal	✓	✓	✓	✓							86
RescanLuns	✓	✓		✓							97
Reset	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	103
RestoreWWN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	120
SaveConfig	✓	✓	✓	✓							69

Table 5-1 CLI Client Command Reference (Continued)

Command	Linux	Solaris	VMWare ESX	Windows	CIM	CIM Provider					Page
						3.0	3.1	3.2	3.4.4	3.5	
ServerAttributes	✓	✓	✓	✓	✓						48
SetAuthConfig	✓	✓		✓							52
SetBeacon	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	65
SetBindingSupport		✓		✓							107
SetBootParam	✓	✓	✓	✓							55
SetBootTargetSession	✓	✓	✓	✓							86
SetCableNVP	✓	✓	✓	✓					✓	✓	66
SetCnaPGBW	✓	✓	✓	✓	✓		✓	✓	✓	✓	57
SetCimCred				✓							103
SetDCBParam	✓	✓	✓	✓	✓		✓	✓	✓	✓	57
SetDCBPriority	✓	✓	✓	✓	✓		✓	✓	✓	✓	59
SetDriverParam	✓	✓	✓	✓	✓						69
SetDriverParamDefaults	✓		✓	✓	✓						70
SetDumpDirectory			✓		✓		✓	✓	✓	✓	73
SetFIPParam	✓	✓	✓	✓	✓		✓	✓	✓	✓	76
SetInitiatorProperties	✓	✓	✓	✓							87
SetiSCSIBoot	✓	✓	✓	✓							88
SetLunMask		✓		✓							97
SetNetwork Configuration	✓	✓	✓	✓							88
SetPassword	✓	✓		✓							53
SetPersistentBinding		✓		✓							108
SetPfcThrottle	✓	✓	✓	✓	✓						48
SetPhyPortSpeed	✓	✓	✓	✓	✓					✓	49
SetPortEnabled	✓	✓	✓	✓							50
SetRetentionCount	✓	✓	✓	✓	✓		✓	✓	✓	✓	74
SetTargetLogin Properties	✓	✓	✓	✓							89
SetTargetProperties	✓	✓	✓	✓							90
SetTPLoginProperties	✓	✓	✓	✓							90
ShowAdapterLicense-Features	✓	✓	✓	✓	✓			✓	✓	✓	45

Table 5-1 CLI Client Command Reference (Continued)

Command	Linux	Solaris	VMWare ESX	Windows	CIM	CIM Provider					Page
						3.0	3.1	3.2	3.4.4	3.5	
ShowARPTable	✓	✓	✓	✓							92
ShowiSNSServer	✓	✓	✓	✓							92
ShowLicenseAdapterID	✓	✓	✓	✓	✓			✓	✓	✓	46
ShowPersonalities	✓	✓	✓	✓	✓			✓	✓	✓	110
ShowRouteTable	✓	✓	✓	✓							92
ShowTarget	✓	✓	✓	✓							93
ShowTargetPortal	✓	✓	✓	✓							93
TargetLogin	✓	✓	✓	✓							93
TargetLogout	✓	✓	✓	✓							95
TargetMapping	✓	✓	✓	✓	✓						104
TDRTest	✓	✓	✓	✓							66
UmcEnable	✓	✓	✓	✓	✓						111
UmcEnableChanLink	✓	✓	✓	✓	✓						111
UmcGetParams	✓	✓	✓	✓	✓						112
UmcSetBw	✓	✓	✓	✓	✓						113
UmcSetLPVID	✓	✓	✓	✓	✓						114
UpdateiSNSServer	✓	✓	✓	✓							95
Version	✓	✓	✓	✓	✓						104
VPortTargets	✓	✓	✓	✓							118
Wakeup	✓	✓	✓	✓							67

Help

The Help command displays command information for the HbaCmd application. Without using its optional parameters, the Help command lists all the commands in their respective groups. Using the optional parameter, GroupName, it lists the commands in a group. Using the optional parameter, CmdName, it shows the details for a specific command.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
Help [GroupName] [CmdName]
```

Parameters

`GroupName`	This optional parameter lists the commands in a particular group.
`CmdName`	This optional parameter shows the details for a particular CLI command.

Example 1

This help command example lists all the commands in their respective groups:

```
hbacmd help
```

The example output:

```
Usage: hbacmd version
   or  hbacmd { h=IPv4 Address{:port} | Hostname{:port} } <Command>
   or  hbacmd { h={[}IPv6 Address{]:port} <Command>
       Note: When specifying IPv6 address with port option, it must be
             enclosed in []. Example: [fe80::6445:80e9:9878:a527]:9876

Use the following syntax for issuing CIM based commands (IPv4 only):
  A> hbacmd <h=IPv4 {:port}> <m=CIM> [u=userid][p=password][n=namespace] <cmd>
  B> hbacmd <h=IPv4 {:port}> <m=CIM> <cmd>
  Before specifying syntax B, the user should do one of the following:
  1. Add the host IP with CIM credentials using the AddHost command.
     e.g. hbacmd <m=CIM> [u=userid] [p=password] [n=namespace] AddHost <ip>
  2. Set the default CIM credentials using the SetCimCred command.
     e.g. hbacmd SetCimCred <u=userid> <p=password> <n=namespace> <o=port>

Command Summary
  Help Commands
    Help <Group>
      Group: {AdapterLicense, Attributes, Authentication, Boot, CEE, DCB,
              Diagnostics, DriverParams, Dump, eAdapterManagement,
              eLunManagement, eLunMigration, FCoE, iSCSI,
              KeyManagerClientManagement, LUNMasking, Miscellaneous,
              PersistentBinding, Personality, PolicyManagement,
```

```
            ServerKeyManagement, ServerLicenseManagement, VPort, WWN}

Adapter License Management Commands
  ShowLicenseAdapterID, InstallAdapterLicense, ShowAdapterLicenseFeatures

Attributes Commands
  HbaAttributes, PortAttributes, PortStatistics, ServerAttributes,
  SetPhyPortSpeed SetPortEnabled

Authentication Commands
  AuthConfigList, DeleteAuthConfig, GetAuthConfig, GetAuthStatus,
  InitiateAuth, SetAuthConfig, SetPassword

Boot Commands
  EnableBootCode, GetBootParams, SetBootParam

CEE Commands (LP21000 series only)
  CEEDownload, GetCEEParams, SetCEEParam

DCB Commands
  GetDCBParams, SetDCBParam, GetPGInfo, SetDCBPriority, SetCnaPGBW

Diagnostic Commands
  EchoTest, GetBeacon, GetXcvrData, LoadList, LoopBackTest, LoopMap,
  PciData, PostTest, SetBeacon, SetCableNVP, TDRTest, Wakeup

Driver Parameter Commands
  DriverConfig, GetDriverParams, GetDriverParamsGlobal, SaveConfig,
  SetDriverParam, SetDriverParamDefaults

Dump Commands
  DeleteDumpFiles, Dump, GetDumpDirectory, SetDumpDirectory,
  GetRetentionCount, SetRetentionCount, GetDumpFileNames, GetDumpFile

FCoE Commands
  GetFIPParams, SetFIPParam, GetFCFInfo

iSCSI Commands
  AddARPTableEntry, AddRouteTableEntry, AddTarget, AddTargetPortal,
  CleariSNSServer, DelARPTableEntry, DelRouteTableEntry, DiscoveriSNSServer,
  ExportiSCSI, GetInitiatorProperties, GetiSCSILuns, GetiSCSIPortStats,
  GetNetworkConfiguration, GetSessionInfo, ImportiSCSI, iSCSIPing,
  ListSessions, RemoveTarget, RemoveTargetPortal, SetBootTargetSession,
  SetInitiatorProperties, SetiSCSIBoot, SetNetworkConfiguration,
  SetTargetLoginProperties, SetTargetProperties, SetTPLoginProperties,
  ShowARPTable, ShowRouteTable, ShowTarget, ShowTargetPortal, TargetLogin,
  ShowiSNSServer, TargetLogout, UpdateiSNSServer
```

```
LUN Masking Commands
  GetLunList, GetLunUnmaskByHba, GetLunUnmaskByTarget, RescanLuns,
  SetLunMask

Miscellaneous Commands
  AddHost, CnaGetEventLog, CnaClearEventLog, Download, ExportSANInfo,
  GetCimCred, GetElxSecInfo, GetQoSInfo, GetVPD, ListHBAs, ListVFunctions,
  RemoveHost, Reset, SetCimCred, SetPfcThrottle, TargetMapping

Persistent Binding Commands
  AllNodeInfo, BindingCapabilities, BindingSupport, PersistentBinding,
  RemoveAllPersistentBinding, RemovePersistentBinding, SetBindingSupport,
  SetPersistentBinding

Personality Management Commands
  ShowPersonalities, ChangePersonality

Universal Multichannel Commands
  UmcEnable, UmcEnableChanLink, UmcGetParams, UmcSetBw, UmcSetLPVID

Virtual Port "VPort" Commands
  CreateVPort, DeleteVPort, EnableSRIOV, ListVFunctions, ListVPorts,
  VPortTargets, ListVMs

WWN Management Commands
  ChangeWWN, GetWWNCap, ReadWWN, RestoreWWN
```

Example 2

This help command example shows the details for the SetDCBParam command:

```
hbacmd help setdcbparam
```

The example output:

```
SetDCBParam <WWPN|MAC> <Param> <Value>
  WWPN : World Wide Port Name of FCoE Port
  MAC  : MAC address of iSCSI or NIC port
  Param: Parameter Name
  Value: Parameter Value

  Note:
  1. For FCoEPriority and iScsiPriority, the valid range is 0 to 7.
     A single priority must be specified.
  2. For the following parameters, the valid values are 0 and 1:
     DcbxState, DcbxMode
     TxState, RxState, TxPortDesc, TxSysDesc, TxSysName, TxSysCap
     PfcEnable, PfcPriority
  3. PfcPriority comma separated list where multiple PFC priorities supported.
  4. Specifying "defaults" for the Param argument sets all DCB parameters
     (including Priority Groups) to their default values.
```

```
Ex: SetDCBParams <WWPN|MAC> defaults
```

Adapter License Management Commands

Note: Adapter License Management commands are supported on OneConnect adapters only.

In these commands, the WWPN or MAC address argument specifies the adapter the command is acting upon. The the HbaCmd application uses the WWPN or MAC address to identify the adapter, but this does not mean that the command works successfully on the specified port.

InstallAdapterLicense

This command installs the license keys from a license file to enable specific features on the adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
InstallAdapterLicense <WWPN|MAC> <LicenseFile>
```

Parameters

`WWPN`	The FCoE port WWPN of the adapter.
`MAC`	The NIC or iSCSI port address of the adapter.
`License File`	The path to the license key file containing the license keys obtained from the Emulex License website.

Examples

For non-VMware ESX/ESXi hosts:

```
hbacmd InstallAdapterLicense 00-12-34-56-78-9A K:\lf1324.lic
```

For VMware ESX/ESXi hosts:

```
hbacmd h=<IP_Address> m=cim u=root p=<password> n=<namespace>
InstallAdapterLicense 00-12-34-56-78-9A K:\lf1324.lic
```

ShowAdapterLicenseFeatures

This command displays the list of licensed and licensable features, as well as, features that are already licensed. The output is a list of features with an indication of whether or not the feature has been licensed.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ShowAdapterLicenseFeatures <WWPN|MAC>
```

Parameters

WWPN The FCoE port WWPN of the adapter.

MAC The NIC or iSCSI port address of the adapter.

Examples

For non-VMware ESX/ESXi hosts:

```
hbacmd ShowAdapterLicenseFeatures  00-12-34-56-78-9A
```

For VMware ESX/ESXi hosts:

```
hbacmd h=<IP_Address> m=cim u=root p=<password> n=<namespace>
ShowAdapterLicenseFeatures  00-12-34-56-78-9A
```

ShowAdapterLicenseID

This command returns the adapter ID used for enabling licensed features. The adapter ID and the entitlement code are used to obtain license keys which enable various features on the adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ShowLicenseAdapterID <WWPN|MAC>
```

Parameters

WWPN The FCoE port WWPN of the adapter.

MAC The NIC or iSCSI port address of the adapter.

Examples

For non-VMware ESX/ESXi hosts:

```
hbacmd ShowLicenseAdapterID 00-12-34-56-78-9A
```

For VMware ESX/ESXi hosts:

```
hbacmd h=<IP_Address> m=cim u=root p=<password> n=<namespace>
ShowLicenseAdapterID 00-12-34-56-78-9A
```

Attributes Commands

HbaAttributes

This command shows a list of all adapter attributes for all ports on the adapter. The type of information listed may vary according to the adapter model.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
HbaAttributes <WWPN>
```

Parameters

`h` The IP address of the host.

`WWPN` The WWPN of the adapter.

PortAttributes

This command shows a list of port attributes for the adapter. The type of information listed may vary according to the adapter model.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
PortAttributes <WWPN|MAC>
```

Parameters

`h` The IP address of the host.

`WWPN` The WWPN of the adapter.

`MAC` The MAC address of the NIC or iSCSI port.

PortStatistics

This command shows all port statistics for the adapter. The type of information listed may vary according to the adapter model.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
PortStatistics <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

ServerAttributes

This command shows a list of server attributes for the adapter. The type of information listed may vary according to the adapter model.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ServerAttributes <WWPN|MAC>
```

Parameters

`WWPN` The WWPN of the adapter.

`MAC` The MAC address of the NIC or iSCSI port.

SetPfcThrottle

This command returns the PFC Throttle state as enabled or disabled.

Note: The PFC Throttle state returns when using the PortAttributes command for OneConnect OCe10102 adapters. However, for OneConnect adapters with older firmware that does not support PfcThrottle and for non-OneConnect adapters, the PFC Throttle state does not return when using the PortAttributes command.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetPfcThrottle <WWPN> <0|1>
```

Parameters

`WWPN` The WWPN of the adapter.

`0|1` The PFC throttle state:
0 = Disabled
1 = Enabled

SetPhyPortSpeed

This command sets the port speed on OneConnect OCe11100-series adapters only.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetPhyPortSpeed <WWPN|MAC> <Mode> [Speed [Length]]
```

Parameters

`WWPN` The WWPN of the FCoE port.

`MAC` The MAC address of the CNA port.

`Mode` The Mode number:

0 = Default
1 = Auto-negotiate; requires the <Speed> argument.
2 = Force; requires the <Speed> and <Length> arguments.

`Speed` The Speed string.

When <Mode> is 1 or 2, the <Speed> argument is required. When <Mode> is 0, the <Speed> argument is ignored.

The speed of the PHY port. Some valid string values include “100Mb”, “1Gb”, and “10Gb”. The PortAttributes command lists all the valid speeds in Auto-negotiate and Force modes.

`Length` The length of the direct attach copper (DAC) cable in meters. Valid values are 0–10. A <Length> value is required when using a 10Gb SFP Plus transceiver.

When <Mode> is 2, the <Length> argument is required. When <Mode> is 0 or 1, the <Length> argument is ignored.

Examples

The following example configures the PHY port to a forced speed of 1 Gb/sec with a cable length of two meters:

```
hbacmd setphyportspeed 00-00-c9-ad-ad-ac 2 1Gb 2
```

The following example tries to configure the PHY port to a forced speed of 100 Mb/sec:

```
hbacmd setphyportspeed 00-00-c9-a9-41-88 2 100Mb
```

This command results in an error because you must include a <Length> value when <Mode> is 2:

```
ERROR: <431>: Cable length required for force mode and interface
type
```

SetPortEnabled

This command enables or disables the FC or UCNA port.

Notes:

- Ensure that all I/Os on the port are stopped before disabling the port.
- Only OneConnect adapters do not require a reset when the adapter port is enabled or disabled. For all other adapters, when the SetPortEnabled command disables an FC port, the adapter must be reset to activate the new setting.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetPortEnabled <WWPN|MAC> <PortEnable>
```

Parameters

`WWPN`	The WWPN of the adapter.
`MAC`	The MAC address of the NIC or iSCSI port.
`PortEnabled`	The port-enabled state: 0 = Disabled 1 = Enabled

Authentication Commands

Note: Authentication commands are supported on FC adapter ports only.

These command returns the list of WWPNs that have an authentication connection configuration with the specified adapter.

AuthConfigList

Supported By

Linux, Solaris, and Windows

Syntax

```
AuthConfigList <WWPN>
```

Parameters

`WWPN`	The WWPN of the adapter.

DeleteAuthConfig

This command deletes the authentication configuration on the adapter.

Supported By

Linux, Solaris, and Windows

Syntax

```
DeleteAuthConfig <WWPN1> <WWPN2> <PasswordType> <Password>
```

Parameters

`WWPN1`	The WWPN of the adapter.
`WWPN2`	Use "ff:ff:ff:ff:ff:ff:ff:ff" for a switch or use the WWPN for a target.
`PasswordType`	1 = ASCII 2 = Hex (binary) 3 = Password not yet defined
`Password`	The current password value.

GetAuthConfig

This command retrieves the authentication configuration for the adapter.

Supported By

Linux, Solaris, and Windows

Syntax

```
hbacmd GetAuthConfig <WWPN1> <WWPN2>
```

Parameters

`WWPN1`	The WWPN of the adapter.
`WWPN2`	Use "ff:ff:ff:ff:ff:ff:ff:ff" for a switch or use the WWPN for a target.

GetAuthStatus

This command returns the current status for the authentication connection specified by WWPN 1 and WWPN2 (adapter and the switch). It includes the current authentication state (connected or failed). Currently authenticated connections specify the hash algorithm and DH group used in the DHCHAP associated with this connection. Failed status includes the failure reason.

Supported By

Linux, Solaris, and Windows

Syntax

```
GetAuthStatus <WWPN1> <WWPN2>
```

Parameters

WWPN1	The WWPN of the adapter.
WWPN2	Use "ff:ff:ff:ff:ff:ff:ff:ff" for a switch or use the WWPN for a target.

InitiateAuth

This command initiates the authentication configuration on the adapter.

Supported By

Linux, Solaris, and Windows

Syntax

```
InitiateAuth <WWPN1> <WWPN2>
```

Parameters

WWPN1	The WWPN of the adapter.
WWPN2	Use "ff:ff:ff:ff:ff:ff:ff:ff" for a switch or use the WWPN for a target.

SetAuthConfig

This command sets the authentication configuration for the adapter.

Supported By

Linux, Solaris, and Windows

Syntax

```
SetAuthConfig <WWPN1> <WWPN2> <PasswordType> <Password> <Param> <Value>
```

Note: Where multiple parameters and values are used, separate them using commas.

Parameters

WWPN1	The WWPN of the adapter.
WWPN2	Use "ff:ff:ff:ff:ff:ff:ff:ff" for a switch or use the WWPN for a target.
PasswordType	1 = ASCII 2 = Hex (binary) 3 = Password not yet defined
Password	The current password value.

`Param` The parameter names:

- Mode
- Timeout
- Bi-directional
- Hash-priority
- DH-priority
- Re-authentication
- Re-authentication-interval

`Value` The value is based on the type of <Param>:

- Mode: disabled, enabled, or passive
- Timeout: time in seconds
- Bi-directional = disabled or enabled
- Hash-priority: md5 or sha1 (md5 = first md5, then sha1; sha1 = first sha1, then md5)
- DH-priority: 1, 2, 3, 4, 5; any combination up to 5 digits
- Re-authentication: disabled or enabled
- Re-authentication-interval: 0, 10– 3600

SetPassword

This command sets the password for the adapter.

Supported By

Linux, Solaris, and Windows

Syntax

```
SetPassword <WWPN1> <WWPN2> <Flag> <Cpt> <Cpw> <Npt> <Npw>
```

Parameters

`WWPN1` The WWPN of the adapter.

`WWPN2` Must be "ff:ff:ff:ff:ff:ff:ff:ff" for a switch or the actual WWPN for a target.

`Flag` 1 = Local (password used by the adapter when the adapter authenticates to the switch)

2 = Remote (password used by the adapter when the switch authenticates to the adapter)

`Cpt` Current password type
1 = ASCII
2 = Hex (binary)
3 = Password not yet defined

`Cpw` Current password value.

Npt	New password type 1 = ASCII 2 = Hex (binary)
Npw	New password value.

Boot Commands

EnableBootCode

This command is used to perform either of the following:

- Enable or disable network boot for OneConnect adapter (UCNA) NIC ports. If network boot is being enabled, it is necessary to select the specific network boot type. The supported network boot types are PXE (Preboot Execution Environment) and iBFT (iSCSI Boot Firmware Table). Note that iBFT is not supported on all UCNA types.
- Enable/disable the boot code for an FC adapter port. If the boot code is disabled on the FC adapter, the adapter does not boot from the SAN, regardless of the value for the EnableBootFromSan boot parameter. If the boot code is enabled on the FC adapter, the adapter boots from the SAN if the EnableBootFromSan parameter is also enabled.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
EnableBootCode <WWPN|NIC MAC> <Flag> <NetworkBootMethod>
```

Parameters

WWPN	World Wide Port Name of FC port
NIC MAC	MAC address of the NIC port.
Flag	D = Disable the boot code. E = Enable the boot code.
NetworkBootMethod	Network boot method to be used by the NIC ("PXE" or "iBFT". The network boot types supported on the specific NIC may be found in the Available Network Boot Methods string displayed by the HbaAttributes command. This parameter is not required for FC or FCoE ports, and is only specified when enabling network boot.

Examples

The following example enables iBFT for a NIC:

```
C:\Program Files\Emulex\Util\OCManager>HBACMD  EnableNetworkBoot
00-00-c9-11-22-33 e iBFT
```

The following example disables network boot:

```
C:\Program Files\Emulex\Util\OCManager>HBACMD  EnableNetworkBoot
00-00-c9-11-22-33 d
```

GetBootParams

This command shows the boot parameters. If any arguments are missing or invalid, a suitable error is reported. If all arguments are correct, the data is displayed in tabular form.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetBootParams <WWPN> <Type>
```

Parameters

`WWPN` The WWPN of the adapter.

`Type` X86, OpenBoot, or UEFI

SetBootParam

This command changes the boot parameters. You can change adapter parameters and boot device parameters for x86, OpenBoot, and UEFI boot.

- When changing adapter parameters, omit the BootDev keyword and value; otherwise, an error is reported.
- When changing boot device parameters for OpenBoot, omit the BootDev keyword and value; otherwise, an error is reported.
- For boot device parameters for X86 or UEFI, you must provide the BootDev keyword and value.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetBootParam <WWPN> <Type> <Param> <Value1> [BootDev <Value2>]
```

Parameters

`WWPN` The WWPN of the adapter.

Type	Possible values are X86, OpenBoot, or UEFI
Param	The parameter name.
Value1	The parameter value.
BootDev	The boot device.
Value2	The boot device entry number: 0–7

CEE Commands

Three CEE commands are listed when you run the help command; however, the commands are only applicable for a discontinued product and should be ignored.

DCB Commands

Note: Data Center Bridging (DCB) commands are for DCB management of OneConnect adapters only.

This command shows the internal host PFC flag value and DCBX mode (DCB version), as well as the LLDP state for iSCSI, FCoE, and NIC UCNAs.

GetDCBParams

This command shows the internal host PFC flag value and DCBX mode (DCB version), as well as the LLDP state for iSCSI, FCoE, and NIC UCNAs.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetDCBParams <WWPN|MAC>
```

Parameters

WWPN	The WWPN of the adapter.
MAC	The MAC address of the NIC or iSCSI port.

Example

```
hbacmd h=10.192.203.154 getdcbparams 00-00-c9-93-2f-d8
```

GetPGInfo

This command shows the bandwidth percentages for all the priority groups for the port. Additionally, this command displays the number of priority groups supported by an adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetPGInfo <WWPN|MAC>
```

Parameters

`WWPN` The WWPN address of the FCoE port.

`MAC` The MAC address of the NIC or iSCSI port.

Example

```
hbacmd h=10.192.203.154 getpginfo 00-00-c9-93-2f-d8
```

SetCnaPGBW

This command sets the bandwidth percentage of a priority group according to the following rules:

1. Bandwidths (BW0–BW7) for priority groups 0–7 (PG0–PG7) must total 100 (for 100%).
2. Bandwidth can be assigned to a priority group that has priorities.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetCnaPGBW <WWPN|MAC> <BW0-BW7>
```

Parameters

`WWPN` The WWPN of the adapter.

`MAC` The MAC address of the NIC or iSCSI port.

`BW0-BW7` The bandwidths allocated for the priority groups 0–7.

Example

This command sets the bandwidth of PG0 to 50%, PG1 to 50%, and PG2–PG7 to 0%.

```
hbacmd SetCnaPGBW 10:00:00:00:c9:3c:f7:88 50 50 0 0 0 0 0 0
```

SetDCBParam

This command configures the DCB and Link Layer Discovery Protocol (LLDP) settings on the OneConnect adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetDCBParam <WWPN|MAC> <Param> <Value>
```

Parameters

WWPN	The WWPN of the adapter.
MAC	The MAC address of the NIC or iSCSI port.
Param	The parameter name. See the following "DCB Settings for <Param> and <Value>" and "LLDP Settings for <Param> and <Value>" sections.
Value	The parameter value. See the following "DCB Settings for <Param> and <Value>" and "LLDP Settings for <Param> and <Value>" sections.

DCB Settings for <Param> and <Value>

<Param>	Description and <Value>
DCBXState	The Data Center Bridging Exchange protocol (DCBX) state. 0 = Disabled 1 = Enabled
DCBXMode	The DCBX mode: DCB or CIN. 0 = CIN 1 = DCB The <DCBXmode> also configures the FCoE Initialization Protocol (FIP) mode. If <DCBXmode> = DCB, FIP is enabled. If <DCBXmode> = CIN, FIP is disabled.
PFCEnable	Flow control in both directions (transmit and receive). 0 = Disabled 1 = Enabled
FCoEPriority	This parameter is applicable for FCoE adapters only. A single priority must be specified. The range of valid values is 0-7.
iSCSIPriority	This parameter is applicable for iSCSI adapters only. A single priority must be specified. The range of valid values is 0-7.
PFCPriority	A list of comma-separated values where multiple PFC priorities supported. The comma-separated list can contain up to seven values ranging from 0-7.
defaults	Use to set the UCNA DCB parameters (including priority groups) to their default values. For example: `hbacmd SetDCBParam <WWPN|MAC> defaults`

LLDP Settings for <Param> and <Value>

<Param>	Description and <Value>
TxState	Transmit State: DCBX uses LLDP to exchange parameters between two link peers. For the DCBX protocol to operate correctly, both LLDP Rx and Tx must be enabled. If either Rx or Tx is disabled, DCBX is disabled. 0 = Disabled 1 = Enabled
RxState	Receive State: DCBX uses LLDP to exchange parameters between two link peers. For the DCBX protocol to operate correctly, both LLDP Rx and Tx must be enabled. If either Rx or Tx is disabled, DCBX is disabled. 0 = Disabled 1 = Enabled
TxPortDesc	Transmit Port Description: provides a description of the port in an alpha-numeric format. 0 = Disabled 1 = Enabled
TxSysDesc	Transmit System Description: provides a description of the network entity in an alpha-numeric format. 0 = Disabled 1 = Enabled
TxSysName	Transmit System Name: provides the system's assigned name in an alpha-numeric format. 0 = Disabled 1 = Enabled
TxSysCap	Transmit System Capabilities: 0 = Disabled 1 = Enabled

Example

```
hbacmd h=10.192.203.151 m=cim u=root p=Swamiji001 n=root/emulex
setdcbparam 00-00-c9-3c-f7-88 fcoepriority 3
```

SetDCBPriority

This command sets the priorities for a priority group. The values must be set according to the following rules:

1. The priorities range from 0 to 7.
2. The PGIDs range from 0 to 7.
3. A priority can exist in only one priority group.
4. All priorities must appear once in any of the eight priority groups (PG0–PG7).

5. Each set of priorities for a group must be separated by a space.
6. Specify multiple priorities for the same group by a comma-separated list.
7. To specify “none”, use “-’ for the argument.
8. The same priority values cannot be specified to different groups.
9. All priorities (0–7) must be assigned to some PGID.
10. Not all PGIDs must be assigned a priority.
11. Not all adapters support two PFC priorities and eight priority groups. For adapters, if you exceed the PFC priorities or priority groups, an error message appears.

The following rules are specific to FCoE adapters:

1. A minimum of one and a maximum of two PFC priorities can be configured.
2. One of the PFC priorities must match the FCoE priority.
3. The additional PFC priority must be assigned to a priority group that has no other priorities.
4. The FCoE priority must be assigned to a priority group that has no other priorities.

The following rules are specific to iSCSI adapters:

1. A minimum of one and a maximum of two PFC priorities can be configured.
2. One of the PFC priorities must match the iSCSI priority.
3. The additional PFC priority must be assigned to a priority group that has no other priorities.
4. The iSCSI priority must be assigned to a priority group that has no other priorities.

The following rules are specific to NIC adapters:

1. Only one PFC priority can be configured.
2. The PFC priority must be assigned to a priority group that has no other priorities.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
hbacmd SetDCBPriority <WWPN|MAC> <PFC Priorities> <Priorities of PGID0>
<Priorities of PGID1>...<Priorities of PGID7>
```

Parameters

`WWPN`	The WWPN of the adapter.
`MAC`	The MAC address of the NIC or iSCSI port.
`PFCPriorities`	The PFC priority that is a comma-separated list of up to seven values, ranging from 0–7.

`Priorities of PGID`	Priority group membership that is a comma-separated list of priorities ranging from 0–7. Each set of priorities for a group must be separated by a space. All priorities (0–7) must be assigned to some PGID.

Example

```
hbacmd h=10.192.203.151 m=cim setdcbpriority 10:00:00:00:c9:3c:f7:88 3
0,1,2,4,5,6,7 3 0 0 0 0 0 0
```

Diagnostic Commands

EchoTest

This command runs the echo test on adapters.

Notes:

- This command is not supported for OneConnect adapters.
- Support for remote adapter is TCP/IP access only. The EchoTest command fails if the target WWPN does not support the ECHO ELS command.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
EchoTest <WWPN Source> <WWPN Destination> <Count> <StopOnError>
<Pattern>
```

Parameters

`WWPN Source`	The WWPN of the originating adapter.
`WWPN Destination`	The WWPN of the destination (echoing) adapter.
`Count`	The number of times to run the test. Use “0” to run the test indefinitely.
`StopOnError`	Checks if the test must be halted on error: 0 = No halt. 1 = Halt on error.
`Pattern`	Hexadecimal data pattern to transmit (up to 8 characters).

GetBeacon

This command shows the current beacon state (either “on” or “off”).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetBeacon <WWPN|MAC>
```

Parameters

`WWPN` The WWPN of the adapter.

`MAC` The MAC address of the NIC or iSCSI port.

GetXcvrData

Note: GetXcvrData is not supported for OneConnect OCe11100 series adapters.

This command shows transceiver data such as vendor name and serial number.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetXcvrData <WWPN|MAC> [Type]
```

Parameters

`WWPN` The WWPN of the adapter.

`MAC` The MAC address of the NIC or iSCSI port.

`Type` The type of SFP data to display:

- 1 = Formatted data
- 2 = Raw data

Example

```
C:\Program Files\emulex\Util\OCManager>hbacmd h=10.192.203.154 m=cim
u=root p=Swamiji001 n=root/emulex getxcvrdata 00-00-c9-93-2f-d6
```

LoadList

Note: Not supported for OneConnect adapters.

This command shows the flash memory load list data for the adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
LoadList <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

LoopBackTest

This command runs the loop test on the adapter specified by the WWPN or MAC address. Only PHY loopback test and MAC loopback tests are enabled for OneConnect adapters.

Note: Loopback tests can be run on FC ports being managed locally or remotely through TCP/IP-based management.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
LoopBackTest <WWPN|MAC> <Type> <Count> <StopOnError> [Pattern]
```

Parameters

`WWPN` The WWPN of the FC or FCoE port.

`MAC` The MAC address of the NIC or iSCSI port.

`Type` The type of loopback test to run:

- 0 = PCI loopback test. Not supported for OneConnect UCNAs.
- 1 = Internal loopback test. Not supported for OneConnect UCNAs.
- 2 = External loopback test (requires loopback plug)
- 3 = DMA loopback test. Only supported for OneConnect UCNAs. This DMA loopback test is not supported via the CIM interface.
- 4 = PHY loopback test. Only supported for OneConnect UCNAs.
- 5 = MAC loopback test. Only supported for OneConnect UCNAs.

`Count` Number of times to run the test. Possible values are 1–99,9999. To run the test infinitely, use 0.

`StopOnError` Checks if the test must be halted on error.
0 = No halt
1 = Halt

`Pattern` An optional parameter that specifies 1–8 hexadecimal bytes to use for loopback data (for example: 1a2b3c4d).

Example

```
hbacmd h=10.192.193.154 m=cim u=root p=Swamiji001 n=root/emulex
loopbacktest 00-00-c9-93-2f-9f 4 120 0
```

LoopMap

Note: Supported for FC ports only.

This command shows the arbitrated loop map data.

Supported By

Linux, Solaris, and Windows

Syntax

```
LoopMap <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

PciData

This command shows the PCI configuration data.

The PCI registers displayed are specific to the function referenced in the OneCommand Manager CLI. For example, if you specify the WWPN for the FCoE function, the PCI registers for that FCoE function return. If you specify the MAC address for the NIC function on that same physical port, the PCI registers for that NIC function return. Only the base PCI registers return. The extended PCI registers are not available on a UCNA.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
PciData <WWPN|MAC>
```

Parameters

`WWPN` The WWPN of the adapter's port.

`MAC` The MAC address of the NIC or iSCSI port.

Example

```
C:\Program Files\emulex\Util\OCManager>hbacmd h=10.192.203.154
m=cim u=root p=Swamiji001 n=root/emulex pcidata 00-00-c9-93-2f-d6
```

The example output:

```
Vendor ID:        0x19A2        Device ID:          0x0700
Command:          0x0406        Status:             0x0010
Revision ID:      0x02          Prog If:            0x00
Subclass:         0x00          Base Class:         0x02
Cache Line Size:  0x10          Latency Timer:      0x00
```

```
Header Type:      0x80          Built In Self Test: 0x00
Base Address 0:   0x00000000    Base Address 1:     0xDF478000
Base Address 2:   0xDF480004    Base Address 3:     0x00000000
Base Address 4:   0xDF4A0004    Base Address 5:     0x00000000
CIS:              0x00000000    SubVendor ID:       0x10DF
SubSystem ID:     0xE622        ROM Base Address:   0x00000000
Interrupt Line:   0x00          Interrupt Pin:      0x01
Minimum Grant:    0x00          Maximum Latency:    0x00
Capabilities Ptr: 0x40
```

PostTest

Note: Not supported for OneConnect adapters.

This command runs the POST on the adapter. Support for a remote adapter is through TCP/IP access only.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
PostTest <WWPN>
```

Parameters

`WWPN`	The WWPN of the adapter.

SetBeacon

This command turns the beacon on or off.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetBeacon <WWPN|MAC> <BeaconState>
```

Parameters

`WWPN`	The WWPN of the FC port.
`MAC`	The MAC address of the NIC or iSCSI port.
`BeaconState`	Indicates the state of the beacon to be set to: 0 = Off 1 = On

SetCableNVP

Note: This command supports only OneConnect OCe11100 series adapters.

This command sets the nominal velocity of propagation (NVP), required for the TDRTest command, for the cable that connects to the physical port associated with the WWPN or MAC.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetCableNVP <WWPN|MAC> <NVP>
```

Parameters

`WWPN`	The WWPN of the FC port.
`MAC`	The MAC address of the NIC or iSCSI port.
`NVP`	A percentage value between 1 and 100. Consult your cable documentation to obtain the proper NVP value.

TDRTest

Note: This command is supported on OneConnect adapters only.

The time-domain reflectometry (TDR) test attempts to determine if any cable faults are compromising the integrity of the link.

For each twisted pair cable (labeled A, B, C, or D):

- If a fault cannot be detected, the test output displays “OK” and an estimated cable length (in meters), if possible. If the length cannot be determined, the estimated length is displayed as “invalid”.
- If one of two faults (a short or an open connection) is detected, the test output displays the fault type (“Shorted” or “Open”) and the distance to the fault (in meters).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
TDRTest <MAC_Address>
```

Parameters

`MAC_Address`	The MAC address of the NIC or iSCSI port.

Example

```
hbacmd TDRTest <MAC>
```

The example output:

```
Pair A: OK. Cable Length Estimation: 50m.
Pair B: OK. Cable Length Estimation: invalid.
Pair C: Open. Distance to Fault: 38m.
Pair D: Shorted. Distance to Fault: 36m.
```

Wakeup

Note: Not supported for OneConnect adapters.

This command wakes up the adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
Wakeup <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

Driver Parameter Commands

Notes:

- Supported for FC and FCoE ports only.
- Driver parameters that are set to temporary or global values (using the "T" and "G" flags, respectively) must be read using the GetDriverParams command to view the current value of the parameter. The GetDriverParamsGlobal command returns only permanently set driver parameter values.

  Additionally, if temporary and global values have been set for one or more driver parameters, the "SaveConfig" command must be run with the "N" flag (using the "N" flag is analogous to the GetDriverParams command) to force the driver parameter values for the specified adapter to be saved. Inaccurate values may be saved if the "G" flag is used for this command.
- The DriverConfig and SetDriverParamDefaults commands are not supported for Solaris.

DriverConfig

This command sets all driver parameters to the values in the .dpv file type. The .dpv file's driver type must match the driver type of the host platform adapter.

Supported By

Linux, VMware ESX, and Windows

Syntax

```
DriverConfig <WWPN> <FileName> <Flag>
```

Parameters

`WWPN`	The WWPN of the adapter.
`FileName`	The name of the .dpv file, which is stored in the Emulex Repository directory.
`Flag`	G = Make change global (all adapters on this host). N = Make change non-global (adapter-specific).

GetDriverParams

This command shows the name and values of each parameter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetDriverParams <WWPN>
```

Parameters

`WWPN`	The WWPN of the adapter.

GetDriverParamsGlobal

This command shows the name and the global value of each driver parameter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetDriverParamsGlobal <WWPN>
```

Parameters

`WWPN`	The WWPN of the adapter.

SaveConfig

This command saves the specified adapter's driver parameters to a file. The resulting file contains a list of driver parameter definitions in ASCII file format with definitions delimited by a comma. Each definition has the following syntax:

```
<parameter-name>=<parameter-value>.
```

The command saves either the values of the global set, or those specific to the adapter in the Emulex Repository directory.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SaveConfig <WWPN> <FileName> <Flag>
```

Parameters

`WWPN`	The WWPN of the adapter.
`FileName`	Name of the file that contains the driver parameters list.
`Flag`	G = Save the global parameter set. N = Save the local (adapter-specific) parameter set.

SetDriverParam

This command changes a driver parameter and designates the scope of the change.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetDriverParam <WWPN> <Flag1> <Flag2> <Param> <Value>
```

Parameters

`WWPN`	The WWPN of the adapter.
`Flag1`	L = Make change local for this adapter only. G = Make change global (all adapters on this host).
`Flag2`	P = Make change permanent (persists across reboot). T = Make change temporary.
`Param`	Name of the parameter to modify.
`Value`	New parameter value, decimal or hexadecimal (0xNNN).

SetDriverParamDefaults

This command changes all values to the default for the adapter(s).

Supported By

Linux, VMware ESX, and Windows

Syntax

```
SetDriverParamDefaults <WWPN> <Flag1> <Flag2>
```

Parameters

`WWPN`	The WWPN of the adapter.
`Flag1`	L = Make change local for this adapter only. G = Make change global (applies to all adapters on this host).
`Flag2`	P = Make change permanent (the change persists across reboot). T = Make change temporary.

Dump Commands

The diagnostic dump feature enables you to create a "dump" file for a selected adapter. Dump files contain information such as firmware version, driver version, and operating system information. This information is useful when troubleshooting an adapter, but is unavailable in read-only mode.

Caution: Disruption of service can occur if a diagnostic dump is run during I/O activity.

The dump files created are text files (".txt" extension) and binary files. The extension for binary files depends on the adapter type:

- OneConnect UCNAs (Enhanced FAT Dump) – ".edf" extension
- OneConnect UCNAs (Core Dump) – ".core" extension
- 16-Gb HBAs – ".bin" extension
- Legacy and LightPulse™ adapters – ".dmp" extension

DeleteDumpFiles

This command deletes all diagnostic dump files for the adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
DeleteDumpFiles <WWPN|MAC>
```

Parameters

`WWPN` The WWPN of the adapter.

`MAC` The MAC address of the UCNA port.

Dump

This command creates a diagnostic dump file in the HbaCmd dump file directory.

Note: In some cases, a core dump can be performed on an inoperative OneConnect UCNA. To view inoperable UCNAs on the local host, use the "ListHBAs down" command. See "ListHBAs" on page 102.

Note: For OneConnect UCNAs, if the "core" optional parameter is not specified, an Enhanced FAT Dump is performed by default.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
Dump <WWPN|MAC> [core [Options]]
```

Parameters

`WWPN` The WWPN of the adapter.

`MAC` The MAC address of the UCNA port.

`core` Perform a core dump on a OneConnect UCNA.

`Options` For available Options, contact Emulex technical support.

GetDumpDirectory

This command shows the dump file directory for the adapters in the host.

Note: The dump directory can be set on VMware ESX hosts only.

Note: The dump directory applies to all adapters in the server. There is not a separate dump directory for each adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetDumpDirectory <WWPN|MAC>
```

Parameters

WWPN	The WWPN of the adapter.
MAC	The MAC address of the UCNA port.

GetDumpFile

This command gets the dump file. For dump file retrieval over FC/FCoE, the WWPN of a remote FC/FCoE port is required to access the remote host. This command gets the user-specified dump file to the local client's dump directory. The dump directory (local and remote) is named Dump, and is placed under the OneCommand Manager installation directory. The dump files are copied from the Dump directory of the remote host to the Dump directory of the local host. Therefore, specifying a local port identifier for this command returns the following error, since the source and destination directory is the same.

```
ERROR: HBACMD_GetDumpFile: RM_GetDumpFile call failed (2)
ERROR: <2>: Not Supported
```

Dump directory:

- For Windows – C:\Program Files\Emulex\Util\Dump
- For Linux – /usr/sbin/ocmanager/Dump
- For Solaris – /opt/ELXocm/Dump
- For VMware ESX – The dump directory set using the SetDumpDirectory command.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetDumpFile <WWPN|MAC> <filename>
```

Parameters

WWPN	The WWPN of the adapter.
MAC	The MAC address of the UCNA port.
filename	The name of the dump file to be copied from the remote host.

Example

```
hbacmd h=10.192.193.154 m=cim u=root p=Swamiji001 n=root/emulex
getdumpfile  BG-HBANYWARE-15_10000000c97d1314_20100120-032820421.dmp
```

GetDumpFileNames

This command gets the names of the files in the remote host's dump directory.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetDumpFileNames <WWPN|MAC>
```

Parameters

WWPN	The WWPN of the adapter.
MAC	The MAC address of the UCNA port.

Example

```
hbacmd h=10.192.193.154 m=cim u=root p=Swamiji001 n=root/emulex
getdumpfilenames
```

GetRetentionCount

This command shows the maximum number of diagnostic dump files to keep.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetRetentionCount <WWPN|MAC>
```

Parameters

WWPN	The WWPN of the adapter.
MAC	The MAC address of the UCNA port.

SetDumpDirectory

Note: This command sets the dump directory for the VMware ESX/ESXi hosts only. For the "Dump" feature to work on a Vmware ESX host, the dump directory must be set.

To use the SetDumpDirectory command, you must have a directory mapped under /vmfs/volumes where the files will be dumped. This directory points to the internal hard disk or an external storage area and can also be mapped using the vSphere Client utility from VMware.

Note: For VMware systems you must set a dump directory before initiating a dump. The dump directory must be a "Storage" partition (a datastore) under the directory /vmfs/volumes.

The application checks for the dump directory and creates the dump files in that location.

Note: The dump directory applies to all adapters in the server. There is no separate dump directory for each adapter.

Supported By

Linux and VMware ESX

Note: In a remote environment, you can use the SetDumpDirectory command from a host running any operating system (including Linux, Solaris, and Windows), but only to a remote host that is running VMware ESX/ESXi.

Syntax

For VMware ESX using the RM interface:

```
hbacmd h=IP_Aaddress[:port] setdumpdirectory <DumpDirectoryName>
```

For VMware ESX/ESXi using the CIM interface:

```
hbacmd h=<IP_Address> m=cim [u=<username>] [p=<password>]
[n=<namespace>] setdumpdirectory <DumpDirectoryName>
```

Parameters

`DumpDirectoryName` The directory under /vmfs/volumes that you created to store the dump files.

`h` The IP address of the host.

Example

This example shows the dump directory set to /vmfs/volumes/ocm-datastore:

```
hbacmd h=10.192.203.173 m=cim u=root p=Swamiji001 n=root/emulex
setdumpdirectory 10:00:00:00:c9:61:f2:64 ocm-datastore
```

SetRetentionCount

This command specifies the maximum number of diagnostic dump files for the adapter. When the count reaches the limit, the next dump operation deletes the oldest file.

Note: The retention count applies to all adapters in the server.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetRetentionCount <WWPN|MAC> <Value>
```

Parameters

`WWPN`	The WWPN of the adapter.
`MAC`	The MAC address of the UCNA port.
`Value`	The number of dump files to retain.

Example

```
hbacmd h=10.192.193.154 m=cim u=root p=Swamiji001 n=root/emulex
SetRetentionCount 00-00-c9-93-2f-9f 6
```

FCoE Commands

Note: These commands are supported only on OneConnect FCoE ports.

GetFCFInfo

This command shows the FCF information of the OneConnect adapter in FCoE mode.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetFCFInfo <WWPN>
```

Parameters

`WWPN`	The WWPN of the adapter.

Example

```
hbacmd getfcfinfo 10:00:00:00:c9:3c:f7:88
```

GetFIPParams

This command gets the FCoE Initialization Protocol (FIP) parameters of the OneConnect adapter in FCoE mode.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetFIPParams <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

Example

```
hbacmd getfipparams 10:00:00:00:c9:5b:3a:6d
```

SetFIPParam

This command sets the FIP parameters of the OneConnect adapter in FCoE mode.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetFIPParam <WWPN> <Param> <Value>
```

Parameters

`WWPN` The WWPN of the adapter.

`Param` The FIP parameter name:

- pfabric
- pswitch
- vlanid
- fcmap
- cinvlanid

`Value` The value based on the FIP parameter name:

- pfabric: 8-byte fabric name (format XX:XX:XX:XX:XX:XX:XX:XX)
- pswitch: 8-byte switch name (format XX:XX:XX:XX:XX:XX:XX:XX)
- vlanid: 2-byte VLAN ID [0-4095] or “any” for any VLANID
- fcmap: 3-byte FC_map, 0x0EFCxx
- cinvlanid: 2-byte VLAN_ID [0-4095]

Example

```
hbacmd setfipparam 10:00:00:00:c9:5b:3a:6d fcmap 0x0efc99
```

iSCSI Commands

The commands in this section support the iSCSI interface in the OneCommand Manager CLI.

Note: iSCSI commands are supported only on OneConnect iSCSI ports.

The MAC address <MAC_Address> of the UCNA port must be passed to each command as the first argument.

Some commands require values to be set in a format similar to: "option_name=value". Type the full option name or the abbreviated option name (shown in Table 5-2, Option Names) and enter the value. The abbreviations are not case sensitive.

Table 5-2 Option Names

Option Name	Abbreviation	Example
Auth	au	`au=1`
DataDigest	dd	`dd=1`
DHCP	dh	`dh=1`
HeaderDigest	hd	`hd=1`
ImmediateData	id	`id=1`
Initiator_Alias	ia	`ia="initiator_alias"`
Initiator_Name	in	`in="initiator_name"`
Priority	pr	`pr=1`
VLAN_ENABLED	ve	`ve=1`
VLAN_ID	vi	`vi=1`

AddARPTableEntry

This command adds an Address Resolution Protocol (ARP) table entry.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
AddARPTableEntry <MAC_Address> <Dest_MAC_Address> <Dest_IP_Address>
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`Dest_MAC_Address`	The destination MAC address to add to the ARP table.
`Dest_IP_Address`	The destination IP address to add to the ARP table.

AddRouteTableEntry

This command adds a new route table entry to the route table of the specified port.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
AddRouteTableEntry <MAC_Address> <Dest_IP_Address> <Subnet_Mask>
<Gateway>
```

Parameters

MAC_Address	MAC address of the UCNA port.
Dest_IP_Address	Destination IP address to add to the route table.
Subnet_Mask	Subnet Mask to add to the route table.
Gateway	Gateway to add to the route table.

AddTarget

This command adds a target to the list of targets seen by the initiator and logs into the target once it has been successfully created. This command requires that you specify a valid target IP <Target_IP>, port number <Port>, and iSCSI name <iscsi_target_name>. If you do not specify the remaining options, these options are set to their default values.

When you set the authentication method <Auth> to a value other than 0, you must set additional parameters. Each string should be enclosed in quotations to avoid mishandling by the Windows, Linux, Solaris, or VMware shell's parser.

- If you set the authentication method to "One-Way CHAP" (<Auth>=1), you must also specify the "Target CHAP Name" and "Target Secret." For example:

  ```
  hbacmd AddTarget 00-11-22-33-44-55 192.168.1.1 8000
  iscsitarget Auth=1 "TgtCHAPName" "TargetSecret1"
  ```

- If you set the authentication method to "Mutual CHAP" (<Auth>=2), you must specify all four values. For example:

  ```
  hbacmd AddTarget 00-11-22-33-44-55 192.168.1.1 8000
  iscsitarget Auth=1 "TgtCHAPName" "TargtSecret1"
  "InitCHAPName" "InitialSecret1"
  ```

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
AddTarget <MAC_Address> <Target_IP> <Port> <iscsi_target_name>
[ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>]
[Boot=<0|1>] [Login=<0|1>] [Auth=<0|1|2> "TgtCHAPName" "TgtSecret"
"InitCHAPName" "InitSecret"]
```

Parameters

MAC_Address	The MAC address of the UCNA port.
Target_IP	IP address of the target portal.
Port	Port number of the target portal (value: 102–65535).
iscsi_target_name	Target's iSCSI name enclosed in quotes (string length: 11–255).

ImmediateData	0 = No 1 = Yes (default)
HeaderDigest	0 = None (default) 1 = CRC32C
DataDigest	0 = None (default) 1 = CRC32C
Boot	This optional parameter specifies whether the added target is a boot device: 0 = Added target is not a boot device. 1 = Added target is a boot device.
Login	This optional parameter specifies whether to log in to the target after it has been added: 0 = Do not log in to the target. 1 = Specify log in to the target. If the Login parameter is omitted, the default is 1.
Auth	0 = None (default) 1 = One-Way CHAP 2 = Mutual CHAP
TgtCHAPNam	Target CHAP name enclosed in quotes (string length: 1–256).
TgtSecret	Target Secret enclosed in quotes (string length: 12–16).
InitCHAPName	Initiator CHAP name enclosed in quotes (string length: 1–256).
InitSecret	Initiator Secret enclosed in quotes (string length: 12–16).

AddTargetPortal

This command adds a new SendTarget Portal for the initiator and runs a target discovery once the SendTarget Portal is created. This command requires that you specify a valid portal IP address <Target_IP> and a valid port number <Port>. If you do not specify the remaining options, these options are set to their default values.

When you set the authentication method <Auth> to a value other than 0, you must set additional parameters. Each string should be enclosed in quotations to avoid mishandling by the Windows, Linux, Solaris, or VMware shell's parser.

- If you set the authentication method to "One-Way CHAP" (<Auth>=1), you must also specify the "Target CHAP Name" and "Target Secret." For example:

```
hbacmd AddTargetPortal 00-11-22-33-44-55 10.0.0.1 8000 Auth=1
"TgtCHAPName" "TargetSecret1"
```

- If you set the authentication method to "Mutual CHAP" (<Auth>=2), you must specify all four values. For example:

```
hbacmd AddTargetPortal 00-11-22-33-44-55 10.0.0.1 8000 Auth=2
"TgtChapName" "TargetSecret1" "InitCHAPName" "InitialSecret1"
```

You must specify either the TSIH value or the ISID qualifier. If you specify the ISID qualifier, you must also specify the Target's ID address.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
AddTargetPortal <MAC_Address> <Target_IP> <Port> [ImmediateData=<0|1>]
[HeaderDigest=<0|1>] [DataDigest=<0|1>] [Auth=<0|1|2> "TgtCHAPName"
"TgtSecret" "InitCHAPName" "InitSecret"]
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`Target_IP`	IP address of the target portal.
`Port`	Port number of the target portal (value: 1024-65535).
`ImmediateData`	0 = No 1 = Yes (default)
`HeaderDigest`	0 = None (default) 1 = CRC32C
`DataDigest`	0 = None (default) 1 = CRC32C
`Auth`	0 = None (default) 1 = One-Way CHAP 2 = Mutual CHAP
`TgtCHAPNam`	Target CHAP name enclosed in quotes (string length: 1-256).
`TgtSecret`	Target Secret enclosed in quotes (string length: 12-16).
`InitCHAPName`	Initiator CHAP name enclosed in quotes (string length: 1-256).
`InitSecret`	Initiator Secret enclosed in quotes (string length: 12-16).

CleariSNSServer

This command clears the configured iSNS server and disables iSNS target discovery. If no iSNS server is currently configured, this command does nothing.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
CleariSNSServer <MAC_Address>
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.

DelARPTableEntry

This command removes an Address Resolution Protocol (ARP) table entry.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
DelARPTableEntry <MAC_Address> <Dest_MAC_Address> <Dest_IP_Address>
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`Dest_MAC_Address`	The destination MAC address to remove from the ARP table.
`Dest_IP_Address`	The destination IP address to remove from the ARP table.

DelRouteTableEntry

This command removes a route table entry from the specified port.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
DelRouteTableEntry <MAC_Address> <Dest_IP_Address> <Subnet_Mask>
<Gateway>
```

Parameters

`MAC_Address`	MAC address of the UCNA port.
`Dest_IP_Address`	Destination IP address to delete from the route table.
`Subnet_Mask`	Subnet Mask to delete from the route table.
`Gateway`	Gateway to delete from the route table.

DiscoveriSNSServer

This command discovers an iSNS server address through DHCP. If the DHCP server returns an iSNS server address, it replaces the configured iSNS server and can be viewed using the ShowiSNSServer command.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
DiscoveriSNSServer <MAC_Address>
```

Parameters

`MAC_Address` The MAC address of the UCNA port.

ExportiSCSI

This command outputs iSCSI target information in XML format. The output can be redirected to a specified file.

Supported By

Linux, Solaris, and Windows

Syntax

```
ExportiSCSI
```

Example

In this example, the command exports all the iSCSI targets of all the adapters on the host. The output is re-directed to the file "targets.xml".

```
hbacmd exportiscsi > targets.xml
```

GetInitiatorProperties

This command shows all the initiator login options for the specified port.

These properties are set as the target portal's login properties to be used when discovering the targets on the target portal. The discovered targets inherit these properties.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetInitiatorProperties <MAC_Address>
```

Parameters

`MAC_Address` The MAC address of the UCNA port.

GetiSCSILuns

This command shows all the LUNs and their information for a specified target. The command gathers the information from the iSCSI target indicated by the <iscsi_target_name> parameter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetiSCSILuns <MAC_Address> <iscsi_target_name>
```

Parameters

`MAC_Address` The MAC address of the UCNA port.

`iscsi_target_name` Target's iSCSI name enclosed in quotes (string length: 11-255)

GetiSCSIPortStats

This command shows all the port statistics for a specified port.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetiSCSIPortStats <MAC_Address>
```

Parameters

`MAC_Address` The MAC address of the UCNA port.

GetNetworkConfiguration

This command lists a port's TCP/IP information.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetNetworkConfiguration <MAC_Address>
```

Parameters

`MAC_Address` The MAC address of the UCNA port.

GetSessionInfo

This command lists all session information for a specified session.

You must specify the <iscsi_target_name> and either the <TSIH> of the session or the session's ISID Qualifier <ISID_Qual> and the target's IP address <Target_IP>. These parameters tell the command to gather the information from the specified target and session. You can find the TSIH and ISID qualifier by running the ListSessions command.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetSessionInfo <MAC_Address> <iscsi_target_name> <TSIH | <ISID_Qual
Target_IP>>
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`iscsi_target_name`	Target's iSCSI name enclosed in quotes (string length: 11–255).
`TSIH`	TSIH value of the session (value: 1–65535).
`ISID_Qual`	ISID qualifier of the session (value: 0–65535).
`Target_IP`	The Target's IP address.

ImportiSCSI

This command imports iSCSI targets from a file to the iSCSI ports on the host.

Supported By

Linux, Solaris, and Windows

Syntax

```
ImportiSCSI <Import_File> [clean]
```

Parameters

`Import_File`	The name of XML file containing import information that was generated by the ExportiSCSI command (see "ExportiSCSI" on page 82).
`clean`	Erases entire iSCSI configuration on all iSCSI ports before importing targets. **Note:** This command fails if the system is booted from an iSCSI target.

Example

In this example, the command imports the iSCSI targets found in the targets.xml file to the iSCSI ports found on the host, and erases the iSCSI configuration (including targets) of all iSCSI ports on these host before importing the targets.

```
hbacmd importiscsi targets.xml clean
```

The example output:

```
All existing targets have been removed.
Added target iqn.2006-01.com.openfiler:target121-000.on.port.00-00-c9-be-1a-24
Added target iqn.2006-01.com.openfiler:target121-001.on.port.00-00-c9-be-1a-24
```

```
Added target iqn.2006-01.com.openfiler:target122-000.on.port.00-00-c9-2f-45-1b
Added target iqn.2006-01.com.openfiler:target122-001.on.port.00-00-c9-2f-45-1b
```

iSCSIPing

This command issues ICMP echo requests to a target.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
iSCSIPing <MAC_Address> <IP_Address>
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`IP_Address`	IP address of target to send ICMP echo request.

ListSessions

This command lists all the sessions on a specified target. The command gathers the information from the iSCSI target indicated by the <iscsi_target_name> parameter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ListSessions <MAC_Address> <iscsi_target_name>
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`iscsi_target_name`	Target's iSCSI name enclosed in quotes. The string length is 11–255.

RemoveTarget

This command removes the target with the specified iSCSI target name <iscsi_target_name>.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
RemoveTarget <MAC_Address> <iscsi_target_name>
```

Parameters

MAC_Address	The MAC address of the UCNA port.
iscsi_target_name	Target's iSCSI name enclosed in quotes. The string length is 11–255.

RemoveTargetPortal

This command removes the SendTarget Portal containing the target IP <Target_IP> and the port <Port> from the list of portals for the specified initiator.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
RemoveTargetPortal <MAC_Address> <Target_IP> <Port>
```

Parameters

MAC_Address	The MAC address of the UCNA port.
Target_IP	The target's IP address.
Port	The port number of the target portal. The possible values are 1024–65535.

SetBootTargetSession

This command enables and disables a iSCSI target's session as a boot session. If a session is enabled as a boot session, and when the system reboots, it will attempt to boot from that target.

Depending on whether the target is logged in, there are two different ways to specify the session. If the target is logged in, use the <TSIH> parameter. If the target is not logged in, use the <ISID_Qual Target_IP> parameter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetBootTargetSession <MAC Address> <Target> <TSIH | <ISID_Qual
Target_IP>> <0|1>
```

Parameters

MAC_Address	The MAC address of the desired iSCSI port.
Target	Specifies the iSCSI name of the desired iSCSI target.
TSIH	TSIH value of the session. The possible values are 1–65535.
ISID_Qual	ISID qualifier of the session. The possible values are 0–65535.

`0|1`	Specifies the state of the BootProperty for the target: 0 = Disabled 1 = Enabled

SetInitiatorProperties

This command sets the initiator properties for the specified port. It allows you to specify an initiator name <Initiator_Name> and an initiator alias <Initiator_Alias>. If you opt not to specify these fields, a default iSCSI name is assigned.

Except for the <Initiator_Name> and <Initiator_Alias> properties, these properties are set as the target portal's login properties to be used when discovering the targets on the target portal. The targets inherit the target portal's properties when they are discovered. The discovered target's login properties can be changed using the SetTargetProperties command.

When you set the authentication method <Auth> to a value other than 0, you must set additional parameters. Each string should be enclosed in quotations to avoid mishandling by the Windows, Linux, Solaris, or VMware shell's parser. Additionally, these properties are used for iSNS target discovery to set the discovered target's login properties.

- If you set the authentication method to "One-Way CHAP" (<Auth>=1), you must also specify the "Target CHAP Name" and "Target Secret." For example:

  ```
  hbacmd SetInitiatorProperties 00-11-22-33-44-55 Auth=1
  "TgtChapName" "TargetSecret1"
  ```

- If you set the authentication method to "Mutual CHAP" (<Auth>=2), you must specify all four values. For example:

  ```
  hbacmd SetInitiatorProperties 00-11-22-33-44-55 Auth=2
  "TgtChapName" "TargetSecret1" "InitCHAPName" "InitialSecret1"
  ```

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetInitiatorProperties <MAC_Address> [Initiator_Name="initiator_name"]
[Initiator_Alias="initiator_alias"] [ImmediateData=<0|1>]
[HeaderDigest=<0|1>] [DataDigest=<0|1>] [Auth=<0|1|2> "TgtCHAPName"
"TgtSecret" "InitCHAPName" "InitSecret"]
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`Initiator_Name`	Initiator iSCSI name enclosed in quotes (string length: 1–224).
`Initiator_Alias`	Initiator iSCSI alias enclosed in quotes (string length: 0–32).
`ImmediateData`	0 = No 1 = Yes (default)

HeaderDigest	0 = None (default) 1 = CRC32C
DataDigest	0 = None (default) 1 = CRC32C
Auth	0 = None (default) 1 = One-Way CHAP 2 = Mutual CHAP
TgtCHAPNam	Target CHAP name enclosed in quotes (string length: 1–256).
TgtSecret	Target Secret enclosed in quotes (string length: 12–16).
InitCHAPName	Initiator CHAP name enclosed in quotes (string length: 1–256).
InitSecret	Initiator Secret enclosed in quotes (string length: 12–16).

SetiSCSIBoot

This command defines whether a specific iSCSI function's Boot ROM is active.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetiSCSIBoot <MAC_Address> <0|1>
```

Parameters

MAC_Address	The MAC address of the desired iSCSI port.
0|1	Specifies the iSCSI boot ROM state: 0 = Disabled 1 = Enabled

SetNetworkConfiguration

This command sets the TCP/IP configuration on a specified port. The required fields for this command depend upon the values set for <DHCP> and <VLAN_ENABLED>.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetNetworkConfiguration <MAC_Address> <VLAN_ENABLED=<0|1>
[<VLAN_ID=<0-4096>> <Priority=<0-7>>] <DHCP=<0|1>> [<IP_Address>
<Subnet_Mask> [Gateway]]
```

Parameters

MAC_Address	The MAC address of the UCNA port.

VLAN_ENABLED	0 = Disabled 1 = Enabled
VLAN_ID	VLAN ID of the interface. The possible values are 0–4095.
Priority	VLAN priority of the interface. The possible values are 0–7.
DHCP	0 = Disabled 1 = Enabled
IP_Address	New IP address. For example: 10.192.1.1.
Subnet_Mask	Subnet Mask. For example: 255.255.255.0.
Gateway	Gateway. For example: 10.192.1.1.

Note: VLAN_ID and Priority are required only if VLAN_ENABLED is enabled; otherwise, these values should be omitted.

Note: IP_Address and Subnet_Mask are required only if DHCP is disabled; otherwise these values should be omitted.

SetTargetLoginProperties

This command sets the login and authentication properties associated with a specific target. This command requires that you specify a valid iSCSI target name <iscsi_target_name>. If you do not specify some of the remaining properties, these options are set to their default values. However, if no properties are changed, an error is generated. You must change at least one property for this command to return successfully.

When you set the authentication method <Auth> to a value other than 0, you must set additional parameters. Each string should be enclosed in quotations to avoid mishandling by the Windows, Linux, Solaris, or VMware shell's parser.

- If you set the authentication method to "One-Way CHAP" (<Auth>=1), you must also specify the "Target CHAP Name" and "Target Secret." For example:

```
hbacmd SetTargetLoginProperties 00-11-22-33-44-55 iscsitarget
Auth=1 "TgtCHAPName" "TargetSecret1"
```

- If you set the authentication method to "Mutual CHAP" (<Auth>=2), you must specify all four values. For example:

```
hbacmd SetTargetLoginProperties 00-11-22-33-44-55 iscsitarget
Auth=2 "TgtChapName" "TargetSecret1" "InitCHAPName"
"InitialSecret1"
```

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetTargetLoginProperties <MAC_Address> <iscsi_target_name>
[ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>]
[Auth=<0|1|2> "TgtCHAPName" "TgtSecret" "InitCHAPName" "InitSecret"]
```

Parameters

MAC_Address	The MAC address of the UCNA port.
iscsi_target_name	Target's iSCSI name enclosed in quotes (string length: 11–255).
ImmediateData	0 = No 1 = Yes (default)
HeaderDigest	0 = None (default) 1 = CRC32C
DataDigest	0 = None (default) 1 = CRC32C
Auth	0 = None (default) 1 = One-Way CHAP 2 = Mutual CHAP
TgtCHAPNam	Target CHAP name enclosed in quotes (string length: 1–256).
TgtSecret	Target Secret enclosed in quotes (string length: 12–16).
InitCHAPName	Initiator CHAP name enclosed in quotes (string length: 1–256).
InitSecret	Initiator Secret enclosed in quotes (string length: 12–16).

SetTargetProperties

This command sets the Extended TimeOut (ETO) value of a target.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetTargetProperties <MAC_Address> <iscsi_target_name> <ETO>
```

Parameters

MAC_Address	The MAC address of the UCNA port.
iscsi_target_name	Target's iSCSI name enclosed in quotes (string length: 11–255)
ETO	The extended timeout option for the target: • For Windows, valid values are 0–3600. • For Linux, Solaris, and VMware ESX, valid values are 0–30.

SetTPLoginProperties

This command sets a target portal's login properties. This command requires that you specify a valid Target IP <Target_IP> and Port <Port>. However, if you specify no options other than the Target IP and Port, no changes are made. You must change at least one of the optional parameters for this command to make any changes to the target portal's login properties.

These properties are used when discovering the targets on the target portal. The targets inherit the target portal's properties when they are discovered. Targets already discovered do not inherit the updated properties, only newly discovered targets inherit the properties.

When you set the authentication method <Auth> to a value other than 0, you must set additional parameters. Each string should be enclosed in quotations to avoid mishandling by the Windows, Linux, Solaris, or VMware shell's parser.

- If you set the authentication method to "One-Way CHAP" (<Auth>=1), you must also specify the "Target CHAP Name" and "Target Secret." For example:

```
hbacmd SetTPLoginProperties 00-11-22-33-44-55 10.192.1.1 5050
Auth=1 "TgtChapName" "TargetSecret1"
```

- If you set the authentication method to "Mutual CHAP" (<Auth>=2), you must specify all four values. For example:

```
hbacmd SetTPLoginProperties 00-11-22-33-44-55 10.192.1.1 5050
Auth=2 "TgtChapName" "TargetSecret1" "InitCHAPName"
"InitialSecret1"
```

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
SetTPLoginProperties <MAC_Address> <Target_IP> <Port>
[ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>]
[Auth=<0|1|2> TgtCHAPName TgtSecret InitCHAPName InitSecret]
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`Target_IP`	The IP address of the target portal.
`Port`	The port number of the target portal (value: 1024–65535).
`ImmediateData`	0 = No 1 = Yes (default)
`HeaderDigest`	0 = None (default) 1 = CRC32C
`DataDigest`	0 = None (default) 1 = CRC32C
`Auth`	0 = None (default) 1 = One-Way CHAP 2 = Mutual CHAP
`TgtCHAPNam`	The Target CHAP name enclosed in quotes (string length: 1–256).
`TgtSecret`	The Target Secret enclosed in quotes (string length: 12–16).
`InitCHAPName`	The Initiator CHAP name enclosed in quotes (string length: 1–256).
`InitSecret`	The Initiator Secret enclosed in quotes (string length: 12–16).

ShowARPTable

This command shows the current ARP table for the specified port.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ShowARPTable <MAC_Address>
```

Parameters

`MAC_Address` The MAC address of the UCNA port.

ShowiSNSServer

This command shows the currently configured Internet Storage Name Server. This command also indicates whether or not iSNS discovery is enabled.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ShowiSNSServer <MAC_Address>
```

Parameters

`MAC_Address` The MAC address of the UCNA port.

ShowRouteTable

This command shows the route table for a specific port.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ShowRouteTable <MAC_Address>
```

Parameters

`MAC_Address` The MAC address of the UCNA port.

Example

```
hbacmd h=10.192.203.240 showroutetableentry 00-00-c9-a0-ce-77
```

ShowTarget

This command shows the properties for a specified target. If you do not specify the iSCSI target name <iscsi_target_name>, all targets and their associated properties return. If you specify <refreshtargets> in place of the <iscsi_target_name>, all targets are refreshed before returning the information. If you do not provide a <iscsi_target_name> or <refreshtargets> value, only the targets from the last refresh are displayed.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ShowTarget <MAC_Address> [<iscsi_target_name> | refreshtargets]
```

Note: Only one command option can be specified with this command. That is, you can only specify either <iscsi_target_name> or <refreshtargets>.

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`iscsi_target_name`	The target's iSCSI name enclosed in quotes (string length: 11–255).
`refreshtargets`	Refresh all targets before displaying the information.

ShowTargetPortal

This command shows the properties for a specified SendTarget Portal. If the <Target_IP> and <Port> are not specified, all SendTarget Portals and their associated properties return.

Supported By

Linux, Solaris, and Windows

Syntax

```
ShowTargetPortal <MAC_Address> [<Target_IP> <Port>]
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`Target_IP`	IP address of the target portal.
`Port`	Port number of the target portal.

TargetLogin

This command logs in to a target. The iSCSI target name <iscsi_target_name> is the only mandatory option. The <target_portal> and <port> information are optional and

if they are not provided a default target portal is used. If you do not specify the remaining options, these options are set to their default values.

When you set the authentication method <Auth> to a value other than 0, you must set additional parameters. Each string should be enclosed in quotations to avoid mishandling by the Windows, Linux, Solaris, or VMware shell's parser.

- If you set the authentication method to "One-Way CHAP" (<Auth>=1), you must also specify the "Target CHAP Name" and "Target Secret." For example:

  ```
  hbacmd TargetLogin 00-11-22-33-44-55 iscsitarget Auth=1
  "TgtChapName" "TargetSecret1"
  ```

- If you set the authentication method to "Mutual CHAP" (<Auth>=2), you must specify all four values. For example:

  ```
  hbacmd TargetLogin 00-11-22-33-44-55 iscsitarget Auth=2
  "TgtChapName" "TargetSecret1" "InitCHAPName" "InitialSecret1"
  ```

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
TargetLogin <MAC_Address> <iscsi_target_name> [target_portal_ip
<port>]  [ImmediateData=<0|1>] [HeaderDigest=<0|1>] [DataDigest=<0|1>]
[Auth=<0|1|2> "TgtCHAPName" "TgtSecret" "InitCHAPName" "InitSecret"]
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`iscsi_target_name`	The target's iSCSI name enclosed in quotes (string length: 11–255).
`Port`	The port number of the target portal. The possible values are 1024–65535.
`ImmediateData`	0 = No 1 = Yes (default)
`HeaderDigest`	0 = None (default) 1 = CRC32C
`DataDigest`	0 = None (default) 1 = CRC32C
`Auth`	0 = None (default) 1 = One-Way CHAP 2 = Mutual CHAP
`TgtCHAPNam`	The Target CHAP name enclosed in quotes (string length: 1–255).
`TgtSecret`	The Target Secret enclosed in quotes (string length: 12–16).
`InitCHAPName`	The Initiator CHAP name enclosed in quotes (string length: 1–255).
`InitSecret`	The Initiator Secret enclosed in quotes (string length: 12–16).

TargetLogout

This command logs out of a target.

You must specify the iSCSI target name <iscsi_target_name> and either the TSIH <TSIH> of the session, or the session's ISID Qualifier <ISID_Qual> and the target's IP address <Target_IP>.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
TargetLogout <MAC_Address> <iscsi_target_name> <TSIH | <ISID_Qual
Target_IP>>
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`iscsi_target_name`	The target's iSCSI name enclosed in quotes (string length: 11–255).
`TSIH`	The TSIH value of the session. The possible values are 1–65535.
`ISID_Qual`	The ISID qualifier of the session. The possible values are 0–65535.
`Target_IP`	The target's IP address.

UpdateiSNSServer

This command updates the configured iSNS server. This command requires the server IP <Server_IP> and port number <Port> of the iSNS server to be available to respond to the iSNS requests.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
UpdateiSNSServer <MAC_Address> <Server_IP> <Port>
```

Parameters

`MAC_Address`	The MAC address of the UCNA port.
`Server_IP`	IP address of the iSNS server to configure.
`Port`	Port number of the iSNS server to configure (value: 1024–65535).

LUN Masking Commands

Notes:

- Supported for FC/FCoE ports only.
- Linux does not support the GetLunUnMaskByHBA, GetLunUnMaskByTarget, and SetLunMask commands.
- Solaris and VMware ESX do not support the GetLunUnMaskbyHBA, GetLunUnMaskbyTarget, RescanLuns, and SetLunMask commands.

GetLunList

This command queries for the presence of any masked LUNs.

Supported By

Linux, Solaris, and Windows

Syntax

```
GetLunList <HBA WWPN> <Target WWPN> <Option>
```

Parameters

`HBA WWPN`	The WWPN of the adapter.
`Target WWPN`	The WWPN of the target.
`Option`	0 = Get information from the driver. 1 = Get information from the configuration.

GetLunUnMaskByHBA

This command queries for the presence of any unmasked LUNs by adapter.

Supported By

Solaris and Windows

Syntax

```
GetLunUnMaskByHBA <HBA WWPN> <Option>
```

Parameters

`HBA WWPN`	The WWPN of the adapter.
`Option`	0 = Get information from the driver. 1 = Get information from the configuration.

GetLunUnMaskByTarget

This command queries for any unmasked LUNs by target.

Supported By

Solaris and Windows

Syntax

```
GetLunUnMaskByTarget <HBA WWPN> <Target WWPN> <Option>
```

Parameters

`HBA WWPN`	The WWPN of the adapter.
`Target WWPN`	The WWPN of the target.
`Option`	0 = Get information from the driver. 1 = Get information from the configuration.

RescanLuns

This command rescans LUNs to find any new LUNs.

Supported By

Linux, Solaris, and Windows

Syntax

```
RescanLuns <HBA WWPN> <Target WWPN>
```

Parameters

`HBA WWPN`	The WWPN of the adapter.
`Target WWPN`	The WWPN of the target.

SetLunMask

This command masks the specified LUNs.

Supported By

Solaris and Windows

Syntax

```
SetLunMask <HBA WWPN> <Target WWPN> <Option> <Lun> <LunCount> <MaskOp>
```

Parameters

`HBA WWPN`	The WWPN of the adapter.
`Target WWPN`	The WWPN of the target.

`Option`	0 = Get information from the driver. 1 = Get information from the configuration (make persistent). 2 = Send information to both.
`Lun`	The starting LUN number.
`LunCount`	The number of LUNs.
`MaskOp`	A = Mask LUN B = Clear unmask target level C = Clear unmask HBA level D = Unmask LUN E = Unmask target level F = Unmask HBA level

Miscellaneous Commands

AddHost

This command adds a host to the hosts file for TCP/IP management in the OneCommand Manager GUI. The adapters for these hosts are also presented by the ListHBAs command.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

For the RM interface:

```
hbacmd AddHost host_address
```

Note: The "h=" option (for specifying an optional IP address or host name) after "hbacmd" is not available for the AddHost command.

For VMware ESX/ESXi using the CIM interface:

```
hbacmd m=cim [u=<username>] [p=<password>] [n=<namespace>]addhost
<IP_Address>
```

If the username, password, and namespace are not specified, see "Default CIM Credentials" on page 28.

Parameters

`host_address`	The IP address (using the IPv4 or IPv6 format) or the host name.
`IP_Address`	The IP address of the host.

CnaClearEventLog

Note: Supported for OneConnect adapters only.

This command clears the UCNA event log specified by the WWPN or MAC address.

Supported By

Linux, VMware ESX, and Windows

Syntax

```
CnaClearEventLog <WWPN|MAC>
```

Parameters

`WWPN` The WWPN of the UCNA FCoE port.

`MAC` The MAC address of the NIC or iSCSI port of the UCNA.

CnaGetEventLog

Note: Supported for OneConnect adapters only.

This command shows the UCNA event log specified by the WWPN or MAC address.

Supported By

Linux, VMware ESX, and Windows

Syntax

```
CnaGetEventLog <WWPN|MAC>
```

Parameters

`WWPN` The WWPN of the adapter port.

`MAC` The MAC address of the NIC or iSCSI port.

Download

Loads the firmware image to the FC or UCNA port specified by the WWPN or MAC address.

Notes:

- For 16-Gb HBA firmware downloads, OneCommand Manager only accepts ".grp" files.
- For OneConnect and 16-Gb HBAs, while the WWPN or MAC address is used to identify the adapter, the updated firmware applies to all ports on that adapter. It is not necessary to download the firmware on all the adapter ports of a OneConnect adapter or a 16-Gb HBA.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
Download <WWPN|MAC> <FileName>
```

Parameters

`WWPN` The WWPN of the adapter port.

`MAC` The MAC address of the NIC or iSCSI port.

`FileName` The name and location of the firmware image (any file accessible to the CLI client).

ExportSANInfo

Notes:

- Emulex recommends that you redirect this output to a file with proper extension: ".xml" for XML-formatted files and ".csv" for CSV-formatted files.
- Due to the amount of information that must be obtained and reported, this command can take a long time on large SAN configurations.

For reporting purposes, this command captures the SAN information in xml or csv format. Since this command can output a large amount of information, Emulex recommends that you re-direct the output to a file.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ExportSANInfo [format]
```

Note: The "h=" option (for specifying an optional IP address or host name) after "hbacmd" is not available for the ExportSANInfo command.

Parameters

`format` An optional parameter that specifies the format of the adapter information:

- csv
- xml

Note: Leaving the <format> blank shows the data in xml format (default).

GetCimCred

This command shows the default credentials set for the CIM client.

Note: The password is encrypted.

Supported By

Windows

Syntax

```
GetCimCred
```

Parameters

None.

GetElxSecInfo

This command shows the version of the ElxSec system.

Supported By

Windows and Linux

Syntax

```
GetElxSecInfo
```

Parameters

None

GetQoSInfo

This command shows the QoS information for a specified NIC port.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetQoSInfo <MAC_Address>
```

Parameters

`h`	The IP address of name of the host.
`WWPN`	The WWPN of the adapter port.
`MAC`	The MAC address of the NIC or iSCSI port.

Example

```
C:\Program Files\emulex\Util\OCManager>hbacmd h=10.192.203.154 m=cim
u=root p=Swamiji001 n=root/emulex getqosinfo 00-00-c9-93-2f-d6
```

GetVPD

This command shows the port's Vital Product Data (VPD).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetVPD <WWPN|MAC>
```

Parameters

`WWPN`	The WWPN of the adapter.
`MAC`	The MAC address of the NIC or iSCSI port.

ListHBAs

This command shows a list of the manageable Emulex adapters found by local, remote in-band (FC), and remote out-of-band (TCP/IP) discovery. For a NIC-only or iSCSI adapter, the MAC address is displayed rather than the Port WWN. The Node WWN and Fabric WWN are not displayed. The type of information listed may vary according to the adapter model.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
listhbas [local] [m=model] [pt=type] [down]
```

Parameters

`local`	Only display local adapters.
`m=model`	Model filter. Append * to the end of the model name for a wildcard match. For example: `LP9*`
`pt=type`	The port type filter. Valid types are NIC, iSCSI, FC, and FCoE.
`down`	Display only the NIC functions of inoperative OneConnect UCNAs on the local system.

RemoveHost

This command removes a host from the hosts file use for TCP/IP management in the OneCommand Manager application GUI. The <host_address> can be an IP address, using the IPv4 or IPv6 format, or a host name.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

For the RM interface:

```
hbacmd RemoveHost host_address
```

For VMware ESX/ESXi using the CIM interface:

```
hbacmd m=cim removehost <IP_Address>
```

Note: The "h=" option (for specifying an optional IP address or host name) after "hbacmd" is not available for the RemoveHost command.

Parameters

`host_address`	The host to remove.
`IP_Address`	The IP address of the host to remove.

Reset

Notes:

- Supported for FC and FCoE ports only.
- For OneConnect FCoE ports, this command only resets the driver to update changed driver parameters that require a driver reset. It does not cause a hardware reset of the adapter port.

This command resets the adapter. An adapter reset can require several seconds to complete, especially for remote devices. When the reset is completed, the system command prompt is displayed.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
Reset <WWPN>
```

Parameters

`WWPN`	The WWPN of the adapter.

SetCimCred

This command sets the default CIM credentials. You must specify all four credentials: username, password, namespace, and port number. Default credentials are used if any credential is not in the hbacmd command argument. Once the default credentials for a host are set, any other command can be issued by specifying "m=cim".

Supported By

Windows

Syntax

```
SetCimCred <username> <password> <namespace> <portnum>
```

Note: Use this command to set only the CIM credentials. Once this is done, subsequent hbacmd commands do not require you to specify the CIM credentials in the command line.

Parameters

`username` Login User ID of the VMware ESX.

`password` The login password of the VMware ESX.

`namespace` The namespace where the Emulex provider is registered in the SFCB CIMOM of VMware ESX, specifically "root/emulex".

`portnum` The port number of the SFCB CIMOM listening to, that is, 5988 (HTTP) or 5989 (HTTPS).

TargetMapping

This command shows a list of mapped targets and the LUNs for the port.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
TargetMapping <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

Version

This command shows the current version of the OneCommand Manager CLI Client.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

For the RM interface:

```
hbacmd Version
```

Note: The "h=" option (for specifying an optional IP address or host name) after "hbacmd" is not available for the Version command.

For VMware ESX/ESXi using the CIM interface:

```
hbacmd h=<IP address> m=cim version
```

Parameters

None

Persistent Binding Commands

Notes:

- These commands are supported for FC/FCoE ports only.
- The following persistent binding commands are not supported on Linux or VMware ESX:
  - BindingCapabilities
  - BindingSupport
  - PersistentBinding
  - RemoveAllPersistentBinding
  - RemovePersistentBinding
  - SetPersistentBinding
  - SetBindingSupport

  In a remote environment, you can perform persistent bindings operations from a host running any operating system (including Linux or VMware ESX), but only to a remote host that is running Windows or Solaris.
- For a binding to take effect immediately (that is, SetPersistentBinding parameter: Scope = I or B), the <SCSIBus> and <SCSITarget> parameters must match the SCSI bus and SCSI target to which the FC target is already automapped. If automapping is disabled, the binding takes effect immediately if the FC target is not already persistently bound, and the specified <SCSIBus> and <SCSITarget> parameters are available to be persistently bound. Also, the <BindType> parameter must match the currently active bind type. Otherwise, you are notified that you must reboot the system to cause the persistent binding to become active.

AllNodeInfo

This command shows target node information for each target accessible by the adapter.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
AllNodeInfo <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

BindingCapabilities

This command shows the binding capabilities of the adapter. If a binding is configured, it is maintained across reboots.

Supported By

Solaris and Windows

Syntax

```
BindingCapabilities <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

BindingSupport

This command shows the binding support for the adapter.

Supported By

Solaris and Windows

Syntax

```
BindingSupport <WWPN> <Source>
```

Parameters

`WWPN` The WWPN of the adapter.

`Source` C = Configuration support
L = Live support

PersistentBinding

This command specifies which set of persistent binding information (configuration or live state) is requested.

Supported By

Solaris and Windows

Syntax

```
PersistentBinding <WWPN> <Source>
```

Parameters

`WWPN` The WWPN of the adapter.

`Source` C = Configuration support
L = Live support

RemoveAllPersistentBinding

This command removes all persisting bindings for the adapter.

Supported By

Solaris and Windows

Syntax

```
RemoveAllPersistentBinding <WWPN>
```

Parameters

`WWPN` The WWPN of the adapter.

RemovePersistentBinding

This command removes persistent binding between an FC target and a SCSI Bus and target. The binding to be removed can be to a target WWPN, target WWNN, or target D_ID.

Supported By

Solaris and Windows

Syntax

```
RemovePersistentBinding <WWPN> <BindType> <ID> <SCSIBus> <SCSITarget>
```

Parameters

`WWPN` The WWPN of the adapter.

`BindType` P = Remove binding by WWPN.

N = Remove binding by WWNN.

D = Remove binding by D_ID.

`ID` The type of ID based on <BindType>:

- Target WWPN if <BindType> = P
- Target WWNN if <BindType> = N
- Target D_ID if <BindType> = D

`SCSIBus` The bus number of the SCSI device.

`SCSITarget` The target number of the SCSI device.

SetBindingSupport

This command enables and sets the binding support(s) for the adapter.

Supported By

Solaris and Windows

Syntax

```
SetBindingSupport <WWPN> <BindFlag>
```

Parameters

`WWPN` The WWPN of the adapter.

`BindFlag` The type of binding support for the adapter:

- D = Binding by D_ID (not available for Storport Miniport driver)
- P = Binding by WWPN
- N = Binding by WWNN (not available for Storport Miniport driver)
- A = Binding by automap (not available for Storport Miniport driver)
- DA = Binding by D_ID and automap
- PA = Binding by WWPN and automap
- NA = Binding by WWNN and automap

SetPersistentBinding

This command sets a persistent binding between an FC target and a SCSI Bus target. The binding can be to a target WWPN, target WWNN, or target D_ID.

Supported By

Solaris and Windows

Syntax

```
SetPersistentBinding <WWPN> <Scope> <BindType> <TargetId> <SCSIBus>
<SCSITarget>
```

Parameters

`WWPN` The WWPN of the adapter.

`Scope` P = Permanent binding (survives reboot).
I = Immediate binding.
B = Binding is both permanent and immediate.

`BindType` P = Enable binding by WWPN
N = Enable binding by WWNN
D = Enable binding by D_ID

`TargetId` If BindType = P, Target WWPN

If BindType = N, Target WWNN

If BindType = D, Target D_ID

`SCSIBus` The bus number of the SCSI device.

`SCSITarget` The target number of the SCSI device.

Personality Change Commands

The OneCommand Manager application enables you to change the personality or protocol running on OneConnect adapters. When you change the personality of the adapter and reboot the host, the adapter starts running the new personality or protocol. The personalities that the OneConnect adapters currently run are NIC-only, NIC + FCoE, and NIC + iSCSI. In some cases, the adapters are pre-configured to support multiple personalities. In other cases, you must install a license key before the adapter can support multiple personalities. See "Adapter License Management Commands" on page 45 for more information.

Note: The three different personalities may not always be available on an adapter. For example, a NIC + FCoE adapter can change to a NIC-only or a NIC + iSCSI adapter, but an iSCSI adapter may not be able to change to a NIC + FCoE adapter.

Note: It is possible to install one (or more) driver kits for the current personality, then change the personality and no longer have the drivers necessary to run the adapter. If you change personalities you must install the appropriate drivers. The appropriate drivers are available on the Emulex website.

ChangePersonality

This command changes the personality on the adapter. After successful change, a reboot is required.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ChangePersonality <WWPN|MAC> <personality_type>
```

Parameters

`WWPN`	The WWPN of the UCNA.
`MAC`	The MAC address of the NIC or iSCSI port.
`Personality Type`	The available values are nic, iscsi, and fcoe.

Example

For non-ESXi hosts:

```
hbacmd ChangePersonality 00-12-34-56-78-9A fcoe
```

For ESXi hosts:

```
hbacmd h=<IP_Adress> m=cim u=root p=<password> n=<namespace>
ChangePersonality 00-12-34-56-78-9A fcoe
```

ShowPersonalities

This command displays the list of personalities available on the adapter. The personality type is displayed as either NIC, iSCSI, or FCoE.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ShowPersonalities <WWPN|MAC>
```

Parameters

`WWPN` The WWPN of the UCNA.

`MAC` The MAC address of the NIC or iSCSI port.

Example

For non-ESXi hosts:

```
hbacmd ShowPersonalities 00-12-34-56-78-9A
```

For ESXi hosts:

```
hbacmd h=<IP_Address> m=cim u=root p=<password> n=<namespace>
showpersonalities 00-12-34-56-78-9A
```

Universal Multichannel (UMC) Commands

The adapter's physical ports provide a converged conduit for network and storage traffic. Each channel has its own unique MAC address. Each channel provides traffic management capabilities such as enabling and disabling, sending and receiving, traffic, minium and maximum transmit rates, and VLAN ID (for untagged packets). For additional information on UMC, refer to the *Emulex Universal Multichannel Reference Guide*.

The CLI's UMC commands allow viewing of the UMC configuration, enabling and disabling of the UMC at the adapter level, and the modification of some of the channel properties.

Notes:

- Properties for all channels on a port can be viewed and modified with the UMC commands even when UMC is disabled. This allows enabling and configuration of UMC (on all channels), and rebooting and running UMC without further configuration.
- An older channel management scheme known as vNIC (or switch dependent mode) may also be referred to as UMC. UMC as described and managed by the CLI commands in this document, for now, only applies to UMC switch agnostic mode (also known as vNIC2). The CLI will not manage vNIC mode.

UmcEnable

This command enables or disables UMC at the adapter level. A system reboot is required to make the change take effect.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
hbacmd UmcEnable <WWPN | MAC Address> <0 | 1>
```

Parameters

`WWPN`	WWPN of the FCoE function on the physical port
`MAC Address`	MAC address of any NIC function on the adapter port
`0`	Disable UMC
`1`	Enable UMC

Example

```
>hbacmd UmcEnable 00-00-c9-bb-cc-aa 1
```

UmcEnableChanLink

This command enables or disables each UMC channel's logical link state. A system reboot is not required to make the change take effect (when UMC is enabled).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
UmcEnableChanLink <WWPN | MAC Address> <C0> <C1> <C2> [C3]
```

Parameters

`WWPN`	WWPN of the FCoE function on the physical port
`MAC Address`	MAC address of any NIC function on the adapter port
`C0`	UMC channel 0 logical link state value (1=enable, 0=disable)
`C1`	UMC channel 1 logical link state value (1=enable, 0=disable)
`C2`	UMC channel 2 logical link state value (1=enable, 0=disable)
`C3`	UMC channel 3 logical link state value (1=enable, 0=disable)

Example

```
>hbacmd UmcEnableChanLink 00-00-c9-bb-cc-aa 1 0 1 1
```

Note: When only three channels are available, specifying C3 will cause an error. This command is not supported on 1 Gb ports. If UMC is disabled when this command is executed, a warning message will be displayed indicating that UMC is currently disabled and must be enabled for these changes to take effect.

UmcGetParams

Shows the current UMC configuration for an adapter's physical port.

The command's output is the current UMC state for the adapter, and also a table showing the port's channels along with their UMC properties. On some adapters, only three channels will be shown instead of four because that is all the physical port supports. Also, the channel Type property shows the protocol that is running on the channel. This is controlled by the CLI's "ChangePersonality" command (not the UMC commands).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
UmcGetParams <WWPN | MAC Address>
```

Parameters

`WWPN`	WWPN of an FCoE function on the physical port
`MAC Address`	MAC address of any NIC function on the adapter port

Example

All NIC

```
>hbacmd UmcGetParams 00-00-c9-bb-cc-aa

UMC Enabled: Configured: Yes, Current: Yes

                              Logical
Func# Type  MAC Address       Link State  LPVID  Min BW  Max BW
----- ----  ----------------  ----------  -----  ------  ------
0     NIC   00-00-c9-bb-cc-aa  Enabled      2       25      50
1     NIC   00-00-c9-bb-cc-ab  Disabled     3       0       50
2     NIC   00-00-c9-bb-cc-ac  Enabled      4       25      50
3     NIC   00-00-c9-bb-cc-ad  Enabled      5       50      75
```

NIC Plus Storage

```
>hbacmd UmcGetParams 00-00-c9-bb-cc-aa

UMC Enabled: Configured: Yes, Current: Yes
```

```
                                Logical
Func# Type  MAC Address         Link State  LPVID  Min BW  Max BW
----- ----  -----------------   ----------  -----  ------  ------
0     NIC   00-00-c9-bb-cc-aa   Enabled      1001    20      50
1     FCoE  00-00-c9-bb-cc-ab   Enabled      n/a     50      100
2     NIC   00-00-c9-bb-cc-ac   Enabled      1002    20      50
3     NIC   00-00-c9-bb-cc-ad   Enabled      1003    10      75
```

UmcSetBw

This command sets the minimum and maximum bandwidths for each channel (up to four) on the physical port. The total of the minimum bandwidths must add up to 100. The maximum bandwidth must be greater than or equal to the minimum bandwidth and has a maximum value of 100. A reboot is not required to make these changes take effect (when UMC is enabled).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
UmcSetBW <WWPN | MAC Address> <Min0,Max0> <Min1,Max1> <Min2,Max2>
[Min3,Max3]
```

Parameters

`MAC Address`	MAC address of any NIC function on the adapter port
`WWPN`	WWPN of the FCoE function on the physical port
`Min0,Max0`	minimum and maximum bandwidths for channel 0
`Min1,Max1`	minimum and maximum bandwidths for channel 1
`Min2,Max2`	minimum and maximum bandwidths for channel 2
`Min3,Max3`	minimum and maximum bandwidths for channel 3

Example

```
>hbacmd UmcSetBW 00-00-c9-bb-cc-aa 25,50 0,50 50,75 25,100
```

Note: When only three channels are available, specifying Min3,Max3 will cause an error. If any channel's logical link state is disabled, "0,0" must be entered for the Min,Max bandwidth. This command is not supported on 1 Gb ports. If UMC is disabled when this command is executed, a warning message will be displayed indicating that UMC is currently disabled and must be enabled for these changes to take effect.

UmcSetLPVID

This command sets the Logical Port VLAN IDs (LPVID) for each channel on a physical port. A reboot is not required to make these changes take effect (when UMC is enabled).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
UmcSetLPVID <WWPN | MAC Address> <LPVID0> <LPVID1> <LPVID2> [LPVID3]
```

Parameters

`WWPN`	WWPN of the FCoE function on the physical port
`MAC Address`	MAC address of any NIC function on the adapter port
`LPVID0`	LPVID for channel 0
`LPVID1`	LPVID for channel 1
`LPVID2`	LPVID for channel 2
`LPVID3`	LPVID for channel 3

Considerations for Using UmcSetLPVID:

- LPVID values are in the range of 2-4094.
- Every NIC channel on a physical port must have a unique LPVID.
- For FCoE and iSCSI channels, '0' must be entered since LPVIDs cannot be set for storage channels.
- When only three channels are available, specifying LPVID3 will cause an error.
- This command is not supported on 1 Gb ports.
- If UMC is disabled when this command is executed, a warning message will be displayed indicating that UMC is currently disabled and must be enabled for these changes to take effect.

Examples

All NIC

```
>hbacmd UmcSetLPVID 00-00-c9-bb-cc-aa 1001 1002 1003 1004
```

NIC Plus Storage

```
>hbacmd UmcSetLPVID 00-00-c9-bb-cc-aa 1001 0 1002 1003
```

Virtual Port (VPort) Commands

Note: Supported by FC and FCoE adapter ports only.

This command creates a virtual port with an automatically-generated WWPN or a user-specified virtual WWPN on the specified physical port. If you specify "auto", the virtual WWPN is generated automatically. Otherwise, you must specify the virtual WWPN for this parameter. If creation is successful, the WWPN is displayed as part of the output from the command. The [vname] optional parameter can be specified for the virtual port's name.

Note: In Linux, VPorts do not persist across system reboots.

CreateVPort

Supported By

Linux, Solaris, and Windows

Syntax

```
CreateVPort <physical WWPN> auto [vname]
```

-or-

```
CreateVPort <physical WWPN> <virtual WWPN> <virtual WWNN> [vname]
```

Parameters

`physical WWPN`	The WWPN of the object adapter.
`auto`	The virtual WWPN is automatically generated for the virtual port.
`vname`	The virtual port's name (optional).
`virtual WWPN`	The virtual WWPN to create.
`virtual WWNN`	The virtual WWNN to create.

DeleteVPort

This command deletes the virtual port specified by a physical and virtual WWPN.

Supported By

Linux, Solaris, and Windows

Syntax

```
DeleteVPort <physical WWPN> <virtual WWPN>
```

Parameters

`physical WWPN`	The WWPN of the adapter.
`virtual WWPN`	The WWPN of the virtual port

EnableSRIOV

This command enables or disables single root I/O virtualization (SR-IOV) on a specified NIC port (that is, physical function).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
EnableSRIOV <MAC> <0|1>
```

Parameters

`MAC`	The MAC address of the port.
`0|1`	0 = Disables SR-IOV. 1 = Enables SR-IOV.

Example

The following command enables SR-IOV on NIC physical function with MAC address 00-00-c9-12-34-56:

```
hbacmd EnableSRIOV 00-00-c9-12-34-56 1
```

ListVFunctions

This command lists the virtual functions on a specified NIC port (that is, physical function).

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ListVFunctions <MAC>
```

Parameters

`MAC`	The MAC address of the port.

Example

```
hbacmd ListVFunctions 00-00-c9-12-34-56
```

The example output:

```
Virtual Functions for 00-00-c9-12-34-56:
```

```
MAC Address    : 00-00-c9-12-34-ab
VLADID         : 10
Transmit Rate  : 100 Mbit/sec.

MAC Address    : 00-00-c9-12-34-cd
VLADID         : 10
Transmit Rate  : 100 Mbit/sec.

MAC Address    : 00-00-c9-12-34-ef
VLADID         : 10
Transmit Rate  : 1 bbit/sec.

MAC Address    : 00-00-c9-13-34-01
VLADID         : 20
Transmit Rate  : 1 Gbit/sec.
```

ListVMs

This command lists all virtual machines and their information for all manageable ports.

If you specify the host with the "h=<host>" option or provide the physical WWPN, only the virtual machines for that host are returned. If you specify the physical port and the virtual port, only the virtual machine for the specified virtual port are returned.

The virtual machine name is only displayed if the virtual port is associated with a virtual machine on VMware ESX 4.1. If you are running this command on any other server that has virtual ports, you will not see the virtual machine name.

Supported By

Linux and VMware ESX

Syntax

```
ListVMs <physical WWPN> <virtual WWPN>
```

Parameters

`physical WWPN` The WWPN of the adapter.

`virtual WWPN` The WWPN of the virtual port.

ListVPorts

This command lists virtual ports on the specified physical port. Leaving the physical WWPN parameter blank lists all virtual ports on all manageable hosts that support virtual ports.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ListVPorts <physical WWPN>
```

Parameters

`physical WWPN` The WWPN of the adapter.

VPortTargets

This command lists targets visible to the specified virtual port.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
VPortTargets <physical WWPN> <virtual WWPN>
```

Parameters

`physical WWPN` The WWPN of the adapter.

`virtual WWPN` The WWPN of the virtual port.

WWN Management Commands

Notes:

- Supported for FC/FCoE adapter ports only.
- WWN Management validates WWNs carefully to avoid name duplication. Therefore, you may see error and warning messages if a name duplication is detected. Emulex strongly recommends that the activation requirement be fulfilled after each WWN change or restore. When running with "pending changes", some diagnostic and maintenance features are not allowed.

ChangeWWN

This command changes the volatile state of WWNs. If the volatile change is requested on an adapter that does not support volatile WWNs, it returns a "not supported error."

Notes:

- When a volatile change is supported, a reboot is required to activate the new setting. Volatile names are active until system power-down or adapter power-cycle.
- For VMware ESX:

- After changing the WWN of an adapter, update your zoning settings before you reboot your ESX server. If the zoning is not updated before your reboot, the subsequent boot may take a long time.
- After changing the WWN of an adapter, you must reboot the ESX system before trying to access the adapter on that system. For information on rebooting the ESX system, refer to the VMware documentation.

- For ESX COS:

  If you are using the CIM interface to access adapters, after changing the WWN of an adapter, you must restart the CIMOM (that is, SFCB) on the ESX COS system before trying to access the adapter on that system. For information on restarting the CIMOM, refer to the VMware documentation.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ChangeWWN <WWPN> <New WWPN> <New WWNN> <Type>
```

Parameters

`WWPN`	The WWPN of the adapter.
`New WWPN`	The WWPN of the new adapter.
`New WWNN`	The WWNN of the new adapter.
`Type`	0 = Volatile 1 = Non-Volatile

GetWWNCap

This command shows if volatile change is supported for the WWPN.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
GetWWNCap <WWPN>
```

Parameters

`WWPN`	The WWPN of the adapter.

ReadWWN

This command reads different types of WWNs.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
ReadWWN <WWPN> <Type>
```

Parameters

`WWPN`	The WWPN of the adapter.
`Type`	0 = Volatile 1 = Non-Volatile 2 = Factory Default 3 = Current 4 = Configured

RestoreWWN

This command changes the WWNs to the factory default or non-volatile values. The change is non-volatile.

Notes:

- A reboot is required to activate the new setting.
- For VMware ESX: After changing the WWN of an adapter, you must reboot the ESX system before trying to access the adapter on that system. For information on rebooting the ESX system, see the VMware documentation.
- For ESX COS: If you are using the CIM interface to access adapters, after changing the WWN of an adapter, you must restart the CIMOM (that is, SFCB) on the ESX COS system before trying to access the adapter on that system. For information on restarting the CIMOM, see the VMware documentation.

Supported By

Linux, Solaris, VMware ESX, and Windows

Syntax

```
RestoreWWN <WWPN> <Type>
```

Parameters

`WWPN`	The WWPN of the adapter.
`Type`	0 = Restore Default WWNs. 1 = Restore NVRAM WWNs.

Appendix A. OneCommand Manager Error Messages

Table A-1 OneCommand Manager Error Messages

Error Message	Command(s)	Description
`Not supported.`	ChangeWWN	If a volatile change is requested on an adapter that does not support volatile WWNs, it returns a “not supported” error. See “ChangeWWN” on page 118.
`ERROR: HBACMD_GetDumpFile: RM_GetDumpFile call failed (2)` `ERROR: <2>: Not Supported`	GetDumpFile	Dump files are copied from the Dump directory of the remote host to the Dump directory of the local host. Specifying a local port identifier for this command returns an error, since the source and destination directory are the same. See “GetDumpFile” on page 72.
`Error: <431> Cable length required for force mode and interface type`	SetPhyPortSpeed	This error is displayed when a length value is not included when the mode is set to 2. Example: `hbacmd setphyportspeed 00-00-c9-a9-41-88 2 100Mb` See “Examples” on page 49.

Table A-1 OneCommand Manager Error Messages (Continued)

Error Message	Command(s)	Description
`Not supported for Target Mode Adapters.`	AddARPTableEntry AddHost AddRouteTableEntry AddTarget AddTargetPortal AllNodeInfo AuthConfigList BindingCapabilities BindingSupport ChangeWWN ClearSNSServer CnaClearEventLog CnaGetEventLog DelARPTableEntry DeleteAuthConfig DelRouteTableEntry DeleteVPort DiscoveriSNSServer Dump EchoTest EnableBootCode EnableSRIOV ExportiSCSI GetBeacon GetAuthConfig GetAuthStatus GetBootParams GetCimCred GetDumpFileNames GetElxSecInfo GetInitiatorProperties GetiSCSILuns GetiSCSIPortStats GetLunList GetLunUnMaskByHBA GetLunUnMaskByTarget GetNetworkConfiguration GetQosInfo GetSessionInfo GetWWNCap Help ImportiSCSI	These HbaCmd commands are not supported for managing target-mode ports. An error message is displayed when attempting to use one of these commands with a target-mode enabled port. See “Commands Supported in Target-Mode Ports” on page 32.

Table A-1 OneCommand Manager Error Messages (Continued)

Error Message	Command(s)	Description
`Not supported for Target Mode Adapters.` (continued)	InitiateAuth InstallAdapterLicense iSCSIPing ListSessions ListVFunctions ListVMs VPortTargets LoadList LoopBackTest LoopMap PciData PersistentBinding PostTest ReadWWN RemoveAllPersistentBinding RemovePersistentBinding RemoveHost RemoveTarget RemoveTargetPortal RescanLuns RestoreWWN SetAuthConfig SetBeacon SetBindingSupport SetBootParam SetBootTargetSession SetCableNVP SetCimCred SetDumpDirectory SetInitiatorProperties SetiSCSIBoot SetLunMask SetNetworkConfiguration SetPassword SetPersistentBinding SetPfcThrottle SetTargetLoginProperties SetTargetProperties SetTPLoginProperties ShowARPTable ShowiSNSServer ShowRouteTable	

Table A-1 OneCommand Manager Error Messages (Continued)

Error Message	Command(s)	Description
`Not supported for Target Mode Adapters.` (continued)	ShowTarget ShowTargetPortal TargetLogin TargetLogout TargetMapping TDRTest UmcEnable UmcEnableChanLink UmcGetParams UmcSetBw UmcSetLPVID UpdateiSNSServer Version VPortTargets Wakeup	